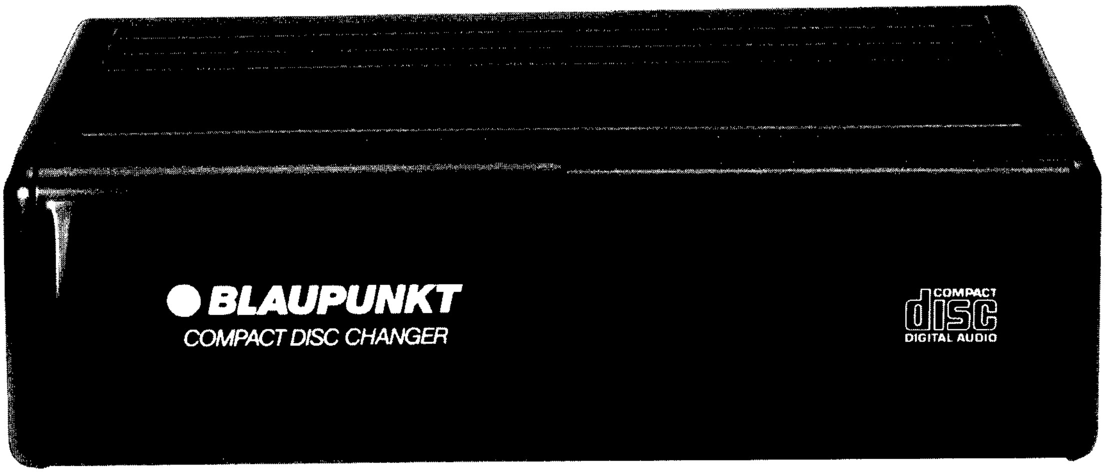
**BLAUPUNKT**
Bosch Telecom

# CD - CHANGER

# CDC - A 03
7 607 768 510

3 D93 440 005 GE 06/93

## Kundendienstschrift • Service Manual



Ⓓ

### Inhaltsverzeichnis :

Seite 2 Anschlußhinweise
Seite 3 Bestandteile, Ausstattung und techn. Daten des Changers
Seite 4 Mechanische Hinweise
Seite 5 - 8 Demontagehinweise
Seite 9 -12 Elektrischer Abgleich
Seite 13 Interne Darstellung der IC´s

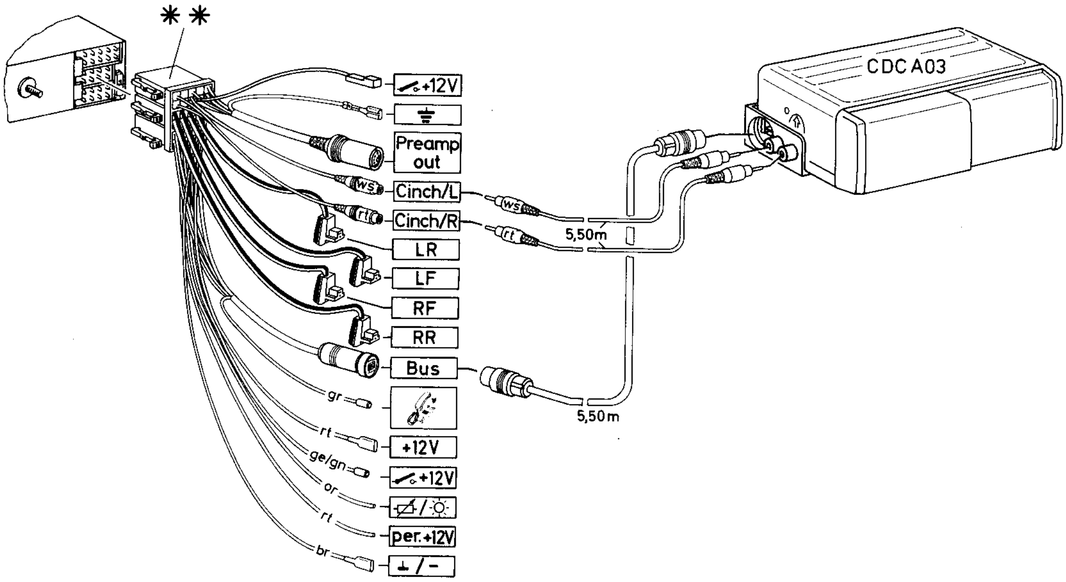
(GB)

### Table of contents :

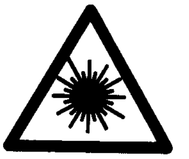
Page 2 Connections
Page 3 Components, equipment and technical data of Changer
Page 4 Mechanical notes
Page 5 - 8 Disassembly note
Page 9 -12 Electrical Adjustment
Page 13 Internal representation of IC´s

## Ⓓ Anschlußhinweise

## (GB) Connections



**CLASS 1**
**LASER PRODUCT**



**UNSICHTBARE LASERSTRAHLUNG!**
**NICHT DEM STRAHL AUSSETZEN**
**LASER KLASSE 3B**

Ⓓ **Vorsicht !** Das Gerät beinhaltet eine Laserkomponente!
Im Servicefall nachfolgende Hinweise beachten!

- Das Gerät arbeitet mit unsichtbarem Laserstrahl. Bei geöffnetem Gerät tritt (im Bereich des Plattenfaches) Laserstrahlung aus.
- Nicht in den Strahl blicken.
- Unbeteiligte Personen vom Arbeitsplatz fernhalten.
- Der Betrachtungsabstand darf 13 cm nicht unterschreiten! Kann dies nicht eingehalten werden, muß eine geeignete Laserschutzbrille getragen werden.

(GB) **Caution !** This unit contains a laser component!
For service observe the following important instructions.

- The unit operates with an invisible laser beam. When the cover is removed (near the disk compartment) invisible laser beams are apparent.
- Avoid direct eye contact with these beams.
- Keep other people away from the working place.
- The viewing distance should not be less than 13 cm! If this distance cannot be ensured, use suitable laser safety goggles.

Ⓕ **Attention !** Cet appareil contient une composante laser!
Pour effectuer le service,veuillez observer les instructions suivantes.

- L'appareil fonctionne avec un rayon laser invisible. Risque de rayonnement invisible en enlevant le capot (près du compartiment de disque).
- Eviter tout contact direct avec le rayon laser.
- Accès au place de travail interdit aux personnes étrangères au service.
- La distance de vue ne doit pas être inférieure à 13 cm! Quand cette distance n´ést pas assureé, veuillez utiliser des lunettes protectrices appropriées.

Ⓔ **Atencion !** Este aparato incluye una componente laser!
En caso de servicio, sirvase Vd. observar las siguientes medidas de precaución.

- El aparato funciona con un rayo laser invisible. Riesgo de radiación invisible (cerca del hueco del disco) al quitar la tapa.
- Evitar todo contacto directo con le rayo laser.
- Acceso al puesto de trabajo prohibido a personas ajenas al servicio.
- La distancia de vista no debe estar inferior a 13 cm! Al no observar dicha distancia, le recomendamos que utilice gafas de protección.

# CDC - A 03

Ⓓ

**Bestandteile des Changers:**

| | | |
|---|---|---|
| - Changer | | |
| - Magazin | Best.Nr.: | 7 607 757 510 |
| | ET Nr.: | 8 619 591 845 |
| - Bus-Verbindungsleitung | ET Nr.: | 8 619 399 706 |
| - Cinch-Verbindungsleitung | ET Nr.: | 8 619 399 709 |
| - Anschlußblock ** | Best.Nr.: | 7 607 876 004 |
| | ET Nr.: | 8 604 390 073 |
| - Anschlußblock für Quick-Out 7608 0066 27 | | |
| | Best.Nr.: | 7 607 876 003 |
| | ET Nr.: | 8 604 390 065 |
| - Anschluß für Versorgungsspannung | | |
| - Montagematerial | | |

**Ausstattungsmerkmale:**

- 10 Disk CD-Changer
- 1 Bit Delta-Sigma Digital Analog Converter
- Fernsteuermöglichkeiten mit dem entsprechendem Autoradio für
  - -Track UP/DOWN
  - -Disk UP/DOWN
  - -Fast Cue UP/DOWN
  - -Track Scan
  - -Mix 1/2
- Anzeige im Autoradio-Display für
  - -Disk-Nr.
  - -Track-Nr.
  - -TOC (Inhaltsverzeichnis)
  - -TIME (Titel-Uhr)
- Elektrischer Auswurf des Magazins mit der Auswurftaste
- Waagerecht oder senkrecht montierbar
- Einbauort : Kofferraum

**Technische Daten:**

| | |
|---|---|
| Betriebsspannung | 12 V DC |
| Frequenzgang | 5 - 20 000 Hz - 0,5dB |
| Klirrfaktor | 0,003 % typisch |
| Übersprechdämpfung | 95 dB/1kHz typisch |
| Signal-/Rauschabstand S/N | 90 dB bewertet |
| | 87 dB unbewertet |
| Ausgangsspannung | 2 Volt ± 2dB |
| Temperaturbereich | - 10°C bis + 55°C |
| Gewicht | ca. 2,5 kg |

# CDC - A 03

Ⓖⓑ

**Changer components:**

| | | |
|---|---|---|
| - Changer | | |
| - Magazine | Best.Nr.: | 7 607 757 510 |
| | ET.Nr.: | 8 619 591 845 |
| - Bus connection line | ET.Nr.: | 8 619 399 706 |
| - Cinch connection cable | ET.Nr.: | 8 619 399 709 |
| - Connection block ** | Best.Nr.: | 7 607 876 004 |
| | ET.Nr.: | 8 604 390 073 |
| - Quick-Out connection block 7608 0066 27 | | |
| | Best.Nr.: | 7 607 876 003 |
| | ET.Nr.: | 8 604 390 065 |
| - Power supply line | | |
| - Mounting material | | |

**Features:**

- 10-disc CD changer
- 1 Bit Delta-Sigma DA converter
- When connected to the corresponding car radio, remote control opportunities for
  - -Track UP/DOWN
  - -Disk UP/DOWN
  - -Fast Cue UP/DOWN
  - -Track Scan
  - -Mix 1/2
- Indication in car radio display of
  - -Disk-Nr.
  - -Track-Nr.
  - -TOC (Table of contents)
  - -TIME (Title-Clock)
- Magazine electrically ejected with Eject button
- Can be horizontally and vertically mounted
- Mounting location : Luggage compartment

**Technical data:**

| | |
|---|---|
| Operating voltage | 12 V DC |
| Frequency response | 5 - 20 000 Hz - 0,5dB |
| Distortion factor | 0,003 % typical |
| Crosstalk attenuation | 95 dB/1kHz typical |
| Signal-to-noise ratio | 90 dB rated |
| | 87 dB unrated |
| Output voltage | 2 Volt ± 2dB |
| Temperature range | - 10°C to + 55°C |
| Weight | approx. 2,5 kg |

Ⓓ

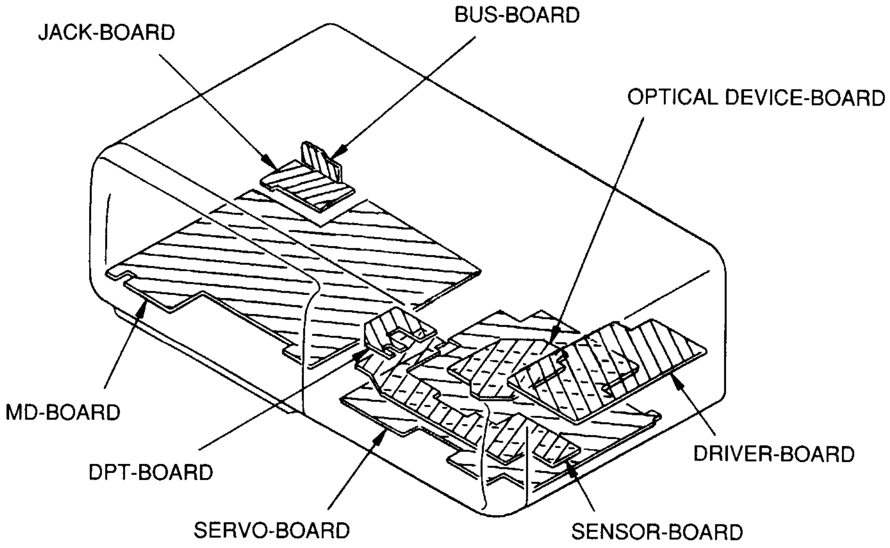
# Mechanische Hinweise

GB

# Mechanical notes

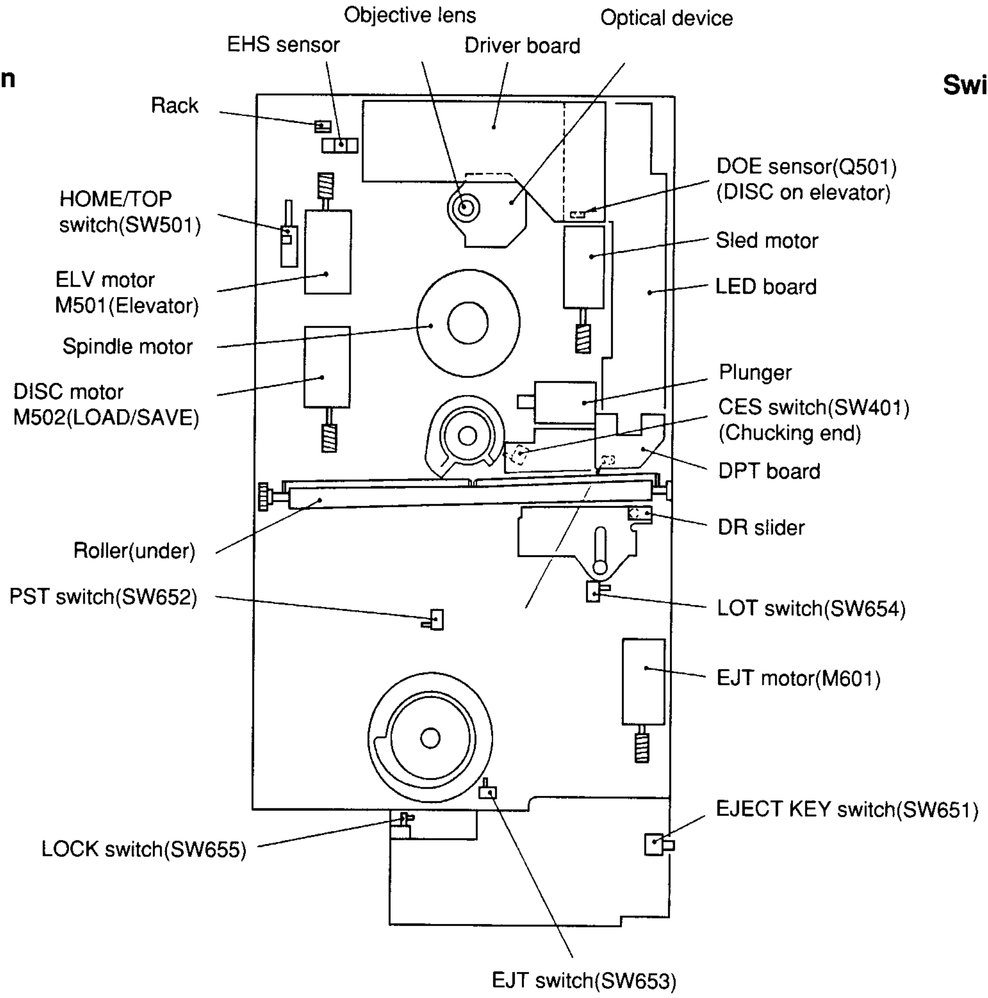
## Plattenpositionen

## Circuit Boards Location


JACK-BOARD
BUS-BOARD
OPTICAL DEVICE-BOARD
MD-BOARD
DPT-BOARD
SERVO-BOARD
SENSOR-BOARD
DRIVER-BOARD

## Schalterpositionen

## Switch position


Objective lens
Optical device
EHS sensor
Driver board
Rack
HOME/TOP switch(SW501)
ELV motor M501(Elevator)
Spindle motor
DISC motor M502(LOAD/SAVE)
Roller(under)
PST switch(SW652)
LOCK switch(SW655)
DOE sensor(Q501) (DISC on elevator)
Sled motor
LED board
Plunger
CES switch(SW401) (Chucking end)
DPT board
DR slider
LOT switch(SW654)
EJT motor(M601)
EJECT KEY switch(SW651)
EJT switch(SW653)

D

## Demontagehinweise

Achtung:

Folgen Sie bei der Demontage der Nummerierung.

GB

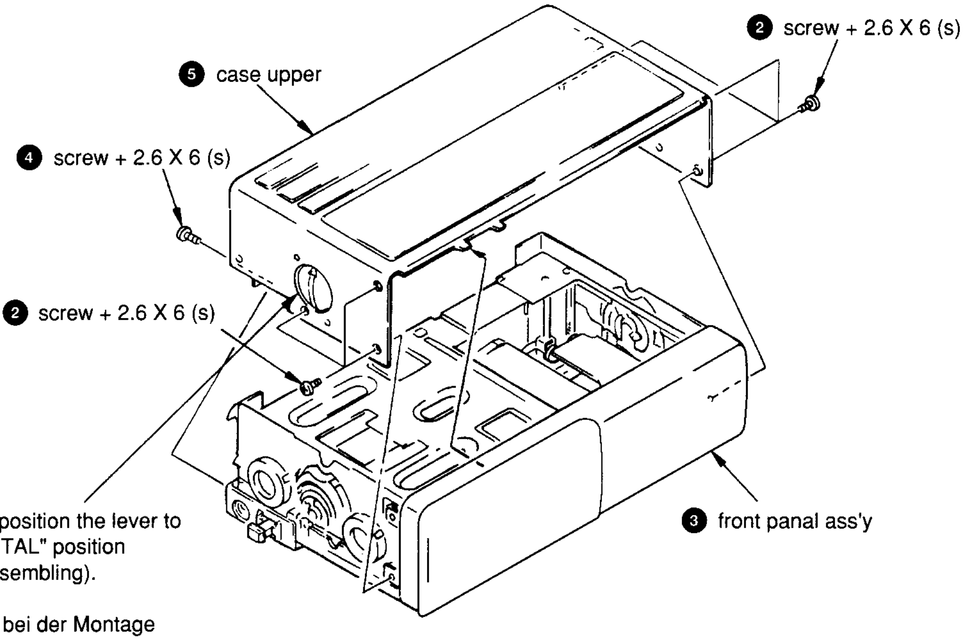
## Disassembly note

Note:

Follow the disassembly procedure in the numerical order given.

Oberdeckel und Frontabdeckung demontieren

Case (upper) and Front Panel ass´y


❷ screw + 2.6 X 6 (s)
❺ case upper
❹ screw + 2.6 X 6 (s)
❷ screw + 2.6 X 6 (s)
❸ front panal ass'y

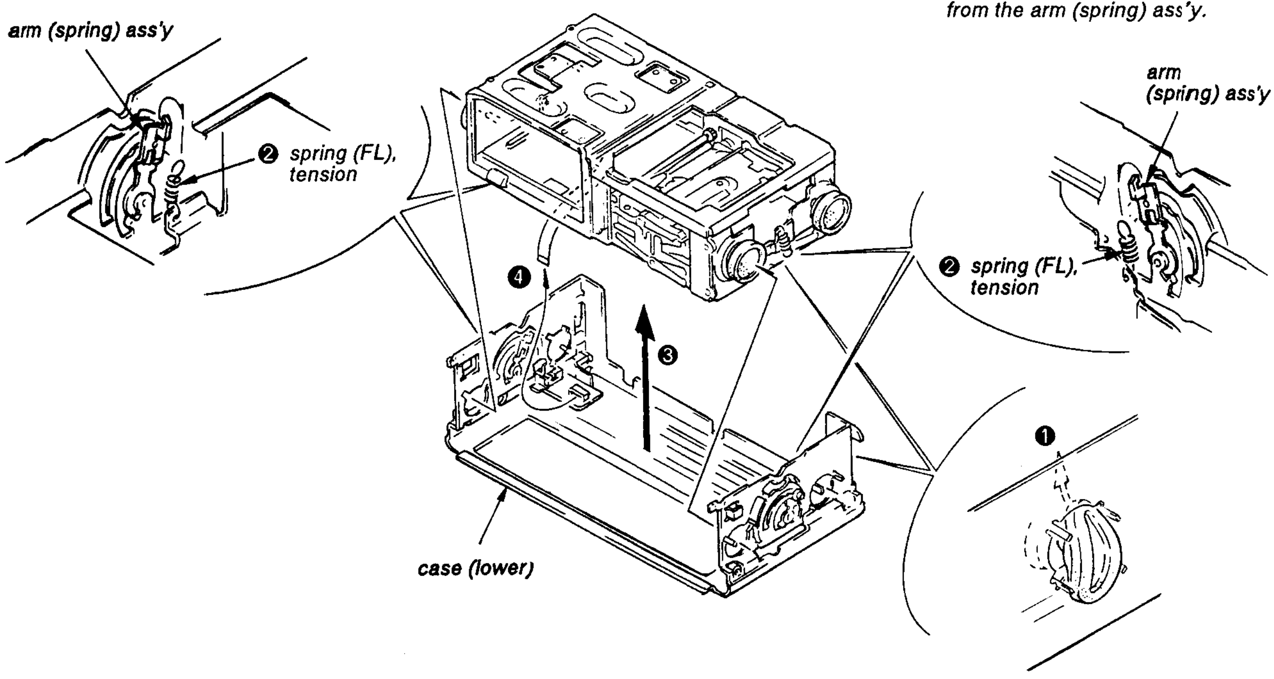
❶ Be sure to position the lever to "HORIZONTAL" position (also on assembling).

Stellen Sie bei der Montage sicher,daß sich die Feder in Stellung "HORIZONTAL" befindet.

Unterdeckel demontieren

Case (lower)

❷ *Remove the tention spring from the arm (spring) ass'y.*

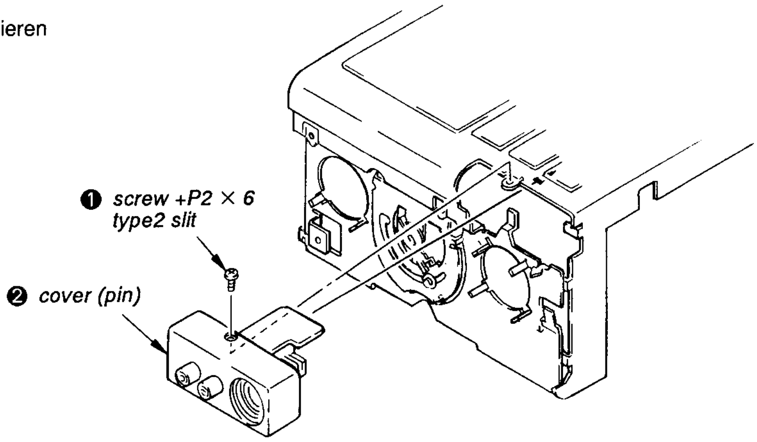

arm (spring) ass'y
❷ spring (FL), tension
arm (spring) ass'y
❷ spring (FL), tension
❹
❸
❶
case (lower)

Ⓓ
# Demontagehinweise

ⒼⒷ
# Disassembly note

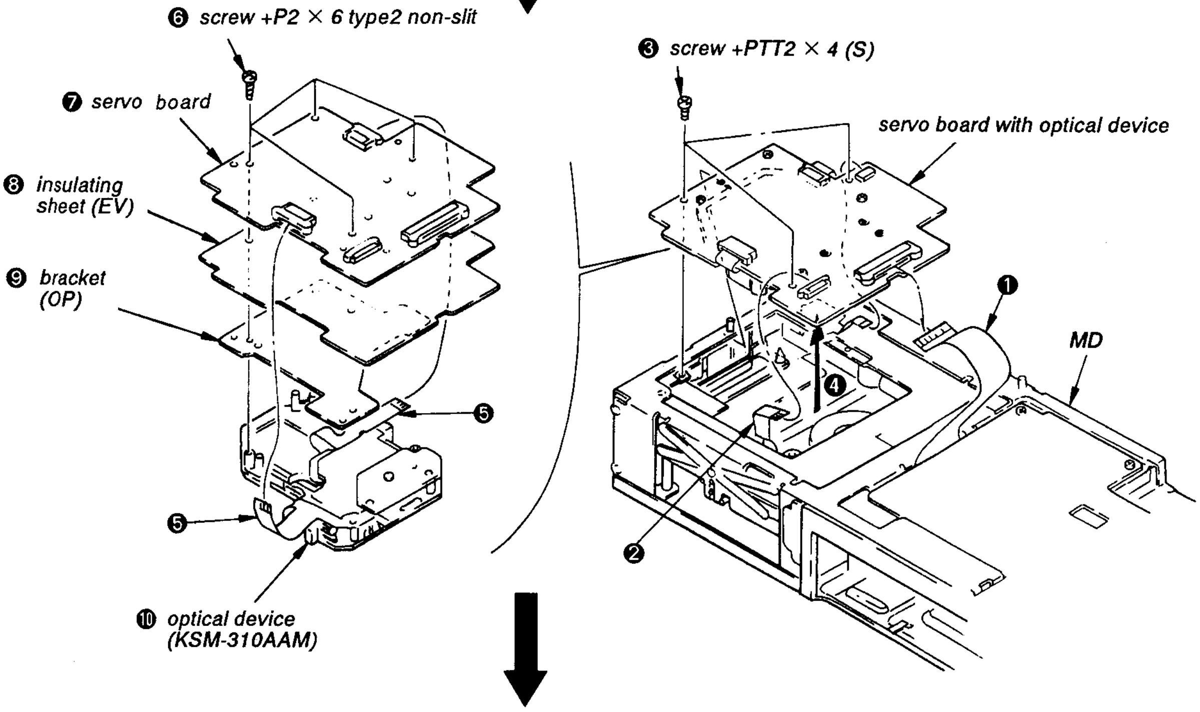
## Bus- und Buchsenplatte demontieren

## Bus and Jack boards


❶ screw +P2 × 6 type2 slit
❷ cover (pin)

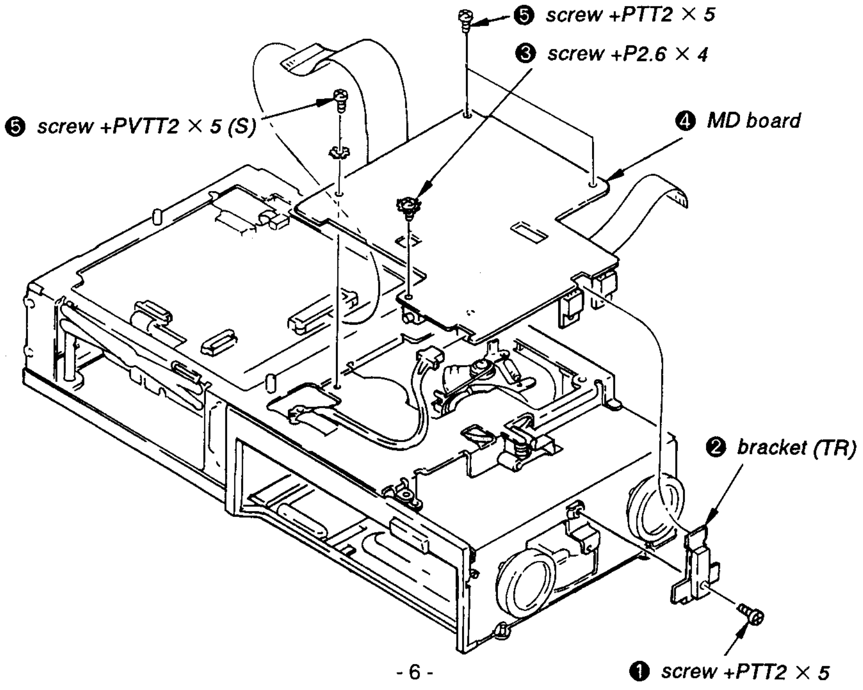
## Servo- und optische Treiberplatte demontieren

## Servo board and optical device


❻ screw +P2 × 6 type2 non-slit
❼ servo board
❽ insulating sheet (EV)
❾ bracket (OP)
❺
❺
❿ optical device (KSM-310AAM)
❸ screw +PTT2 × 4 (S)
servo board with optical device
❶
MD
❹
❷

## MD-Platte demontieren

## MD board

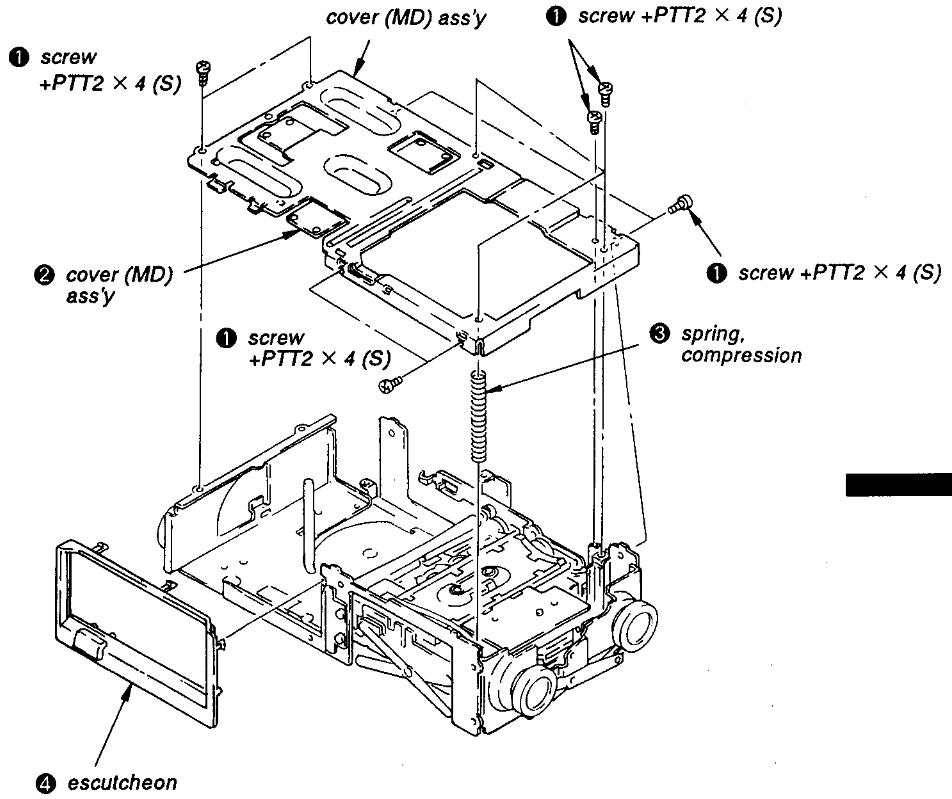

❺ screw +PTT2 × 5
❸ screw +P2.6 × 4
❺ screw +PVTT2 × 5 (S)
❹ MD board
❷ bracket (TR)
❶ screw +PTT2 × 5

## Ⓓ Demontagehinweise

## ⒼⒷ Disassembly note

### Abdeckeinheit und Abdeckrahmen

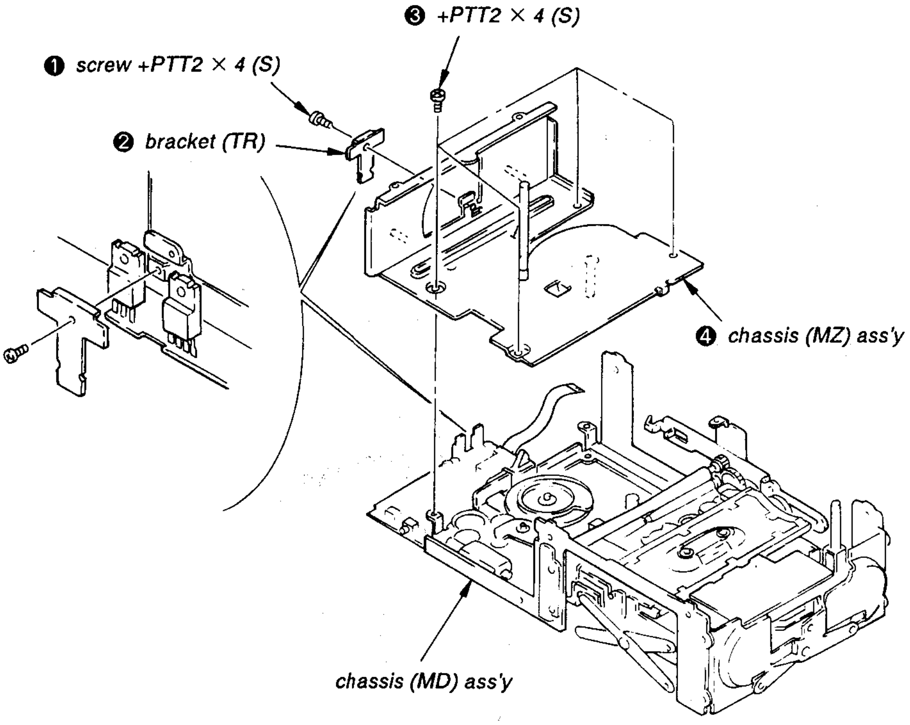
### Cover (MD) ass´y and escutcheon


cover (MD) ass'y
❶ screw +PTT2 × 4 (S)
❶ screw +PTT2 × 4 (S)
❶ screw +PTT2 × 4 (S)
❷ cover (MD) ass'y
❶ screw +PTT2 × 4 (S)
❸ spring, compression
❹ escutcheon

Seite 8
Page 8

### Magazin Chassis demontieren

### Chassis (MZ)

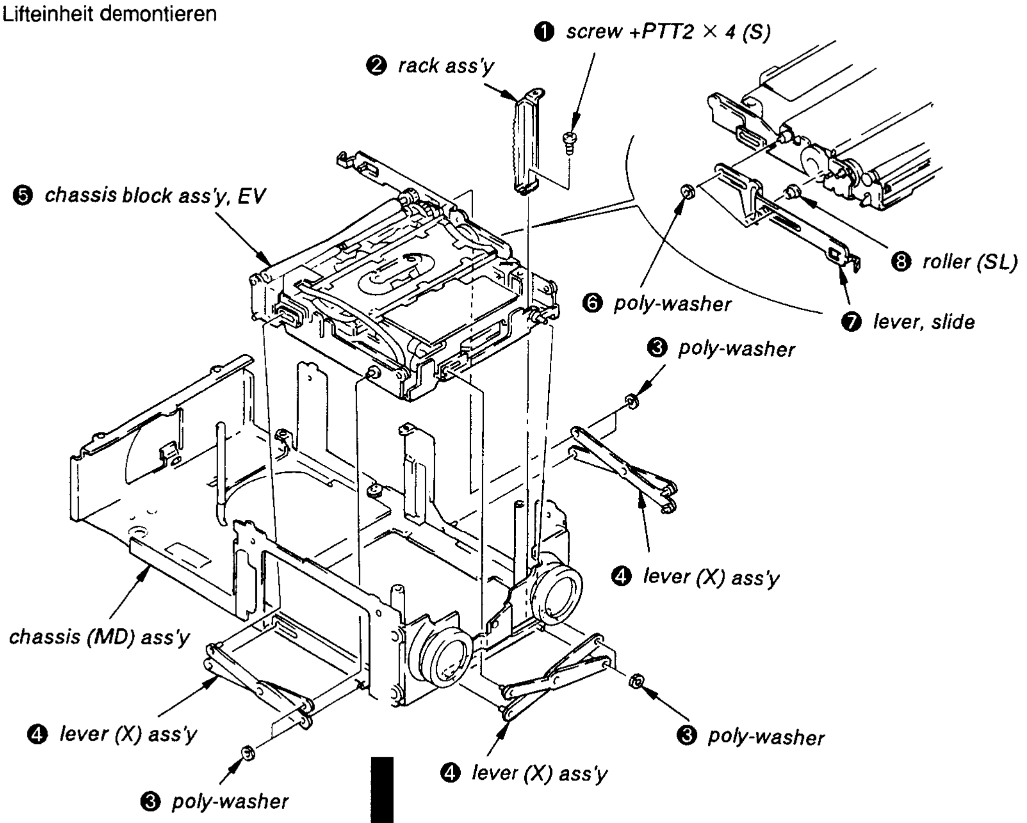

❸ +PTT2 × 4 (S)
❶ screw +PTT2 × 4 (S)
❷ bracket (TR)
❹ chassis (MZ) ass'y
chassis (MD) ass'y

Ⓓ
# Demontagehinweise

ⒼⒷ
# Disassembly note

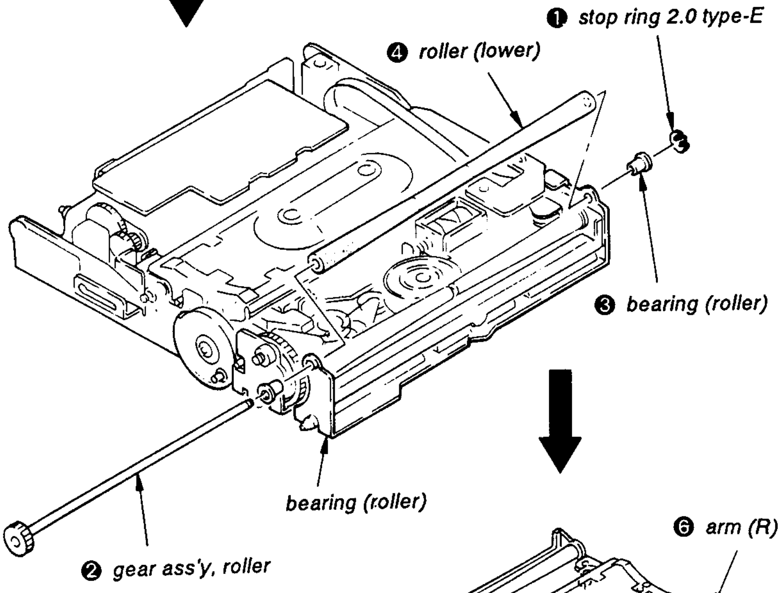
## Lifteinheit demontieren

## Elevator chassis ass´y


❶ screw +PTT2 × 4 (S)
❷ rack ass'y
❺ chassis block ass'y, EV
❻ poly-washer
❽ roller (SL)
❼ lever, slide
❸ poly-washer
❹ lever (X) ass'y
chassis (MD) ass'y
❹ lever (X) ass'y
❸ poly-washer
❹ lever (X) ass'y
❸ poly-washer

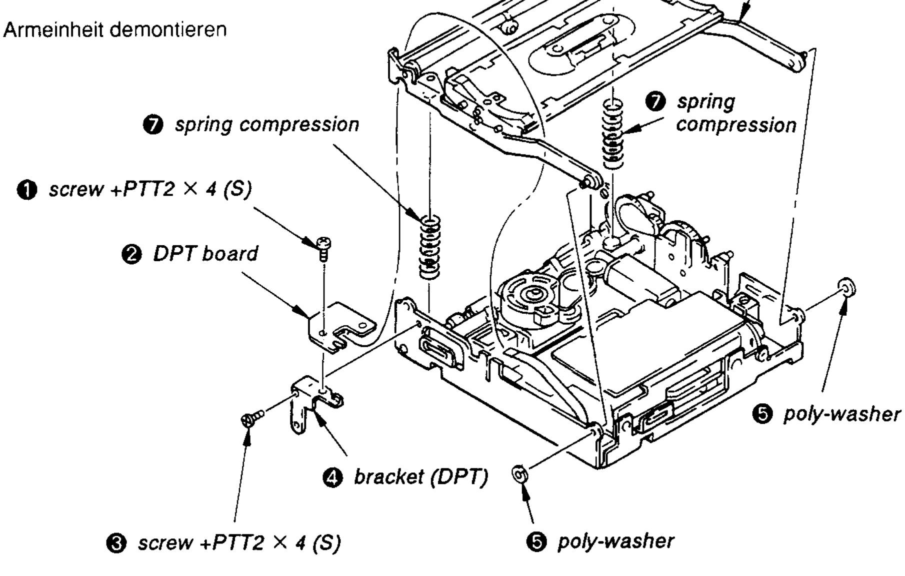
## Rolle demontieren

## Roller (lower)


❶ stop ring 2.0 type-E
❹ roller (lower)
❸ bearing (roller)
bearing (roller)
❷ gear ass'y, roller

## Sensorplatte und Armeinheit demontieren

## DPT board and arm (r) ass´y


❻ arm (R) ass'y
❼ spring compression
❼ spring compression
❶ screw +PTT2 × 4 (S)
❷ DPT board
❺ poly-washer
❹ bracket (DPT)
❸ screw +PTT2 × 4 (S)
❺ poly-washer

Ⓓ

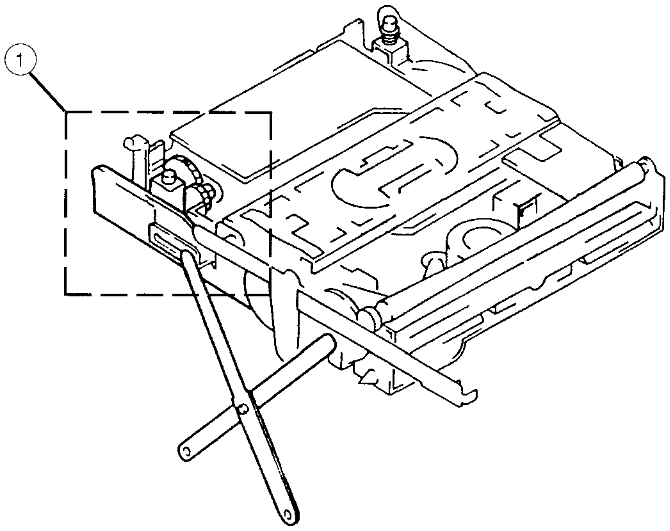
## Hinweis für die Montage

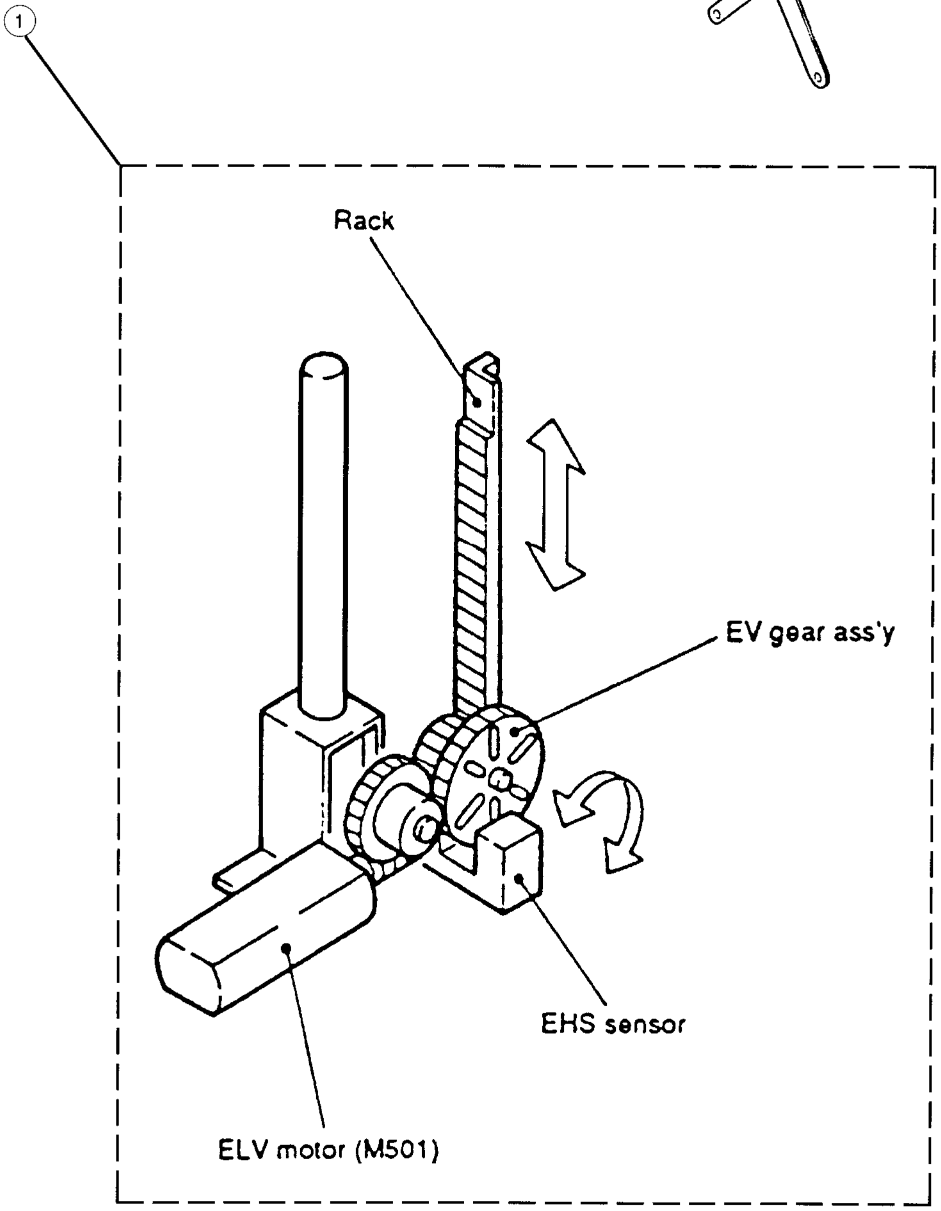
Das Lichtschrankenrad (EV gear ass´y) muß bei der Montage mit einem Schlitz senkrecht stehen (s.Skizze). Zwischen Chassis und Lift soll ca. 1mm Spiel sein. In dieser Stellung wird die Zahnstange (Rack) festgeschraubt.

(GB)

## Mounting notes

During the mounting process, one slot of the EV gear assembly has to be in a vertical position (see illustration). Between the chassis and the lift there should be a play of approx. 1mm. In this position the rack is fixed.





Ⓓ

# Elektrischer Abgleich

1. Abgleich wie folgt durchführen.
2. Wenn angegeben unbedingt die CD "YEDS-18 " verwenden.
3. Betriebsspannung: 14,4 V DC (mehr als 3 A).

## Einstellung des Fokusversatzes (Fig. a)

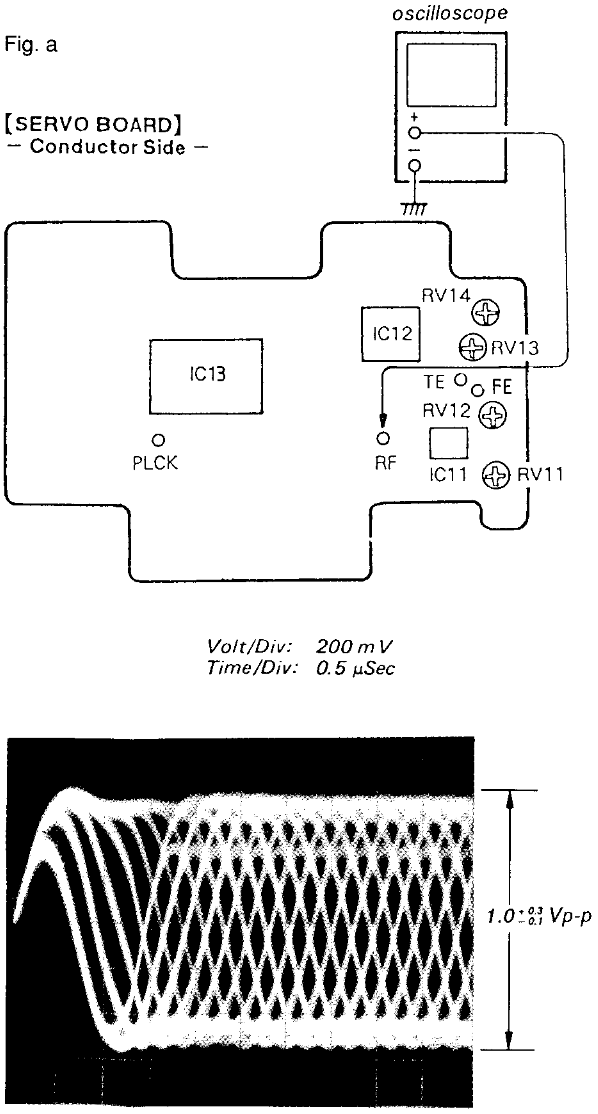
1. Oszilloskop an Testpunkt RF der Servo-Platine anschließen.
2. Gerät durch Laden einer CD in Play-Mode setzen.
3. Auf der Servoplatine RV 12 so einstellen, daß die Wellenform ein deutliches rautenförmiges Muster in der Mitte des Oszilloskopbildes aufweist ( ◊ ) und die Amplitude auf Maximum eingestellt ist.

## Einstellen des Spurversatzes (Fig. b)

1. Oszilloskop an Testpunkt TE, Pin 1 von IC 11, der Servoplatine anschließen.
2. Gerät durch Laden einer CD in Play-Mode setzen.
3. Taste ∧ oder ∨ drücken und die Durchgangswellenform * (traverse waveform) überprüfen.
4. RV 11 (Servoplatine) so einstellen, daß die Oszilloskopdarstellung gegenüber 0V symmetrisch ist.

* Durchgangswellenform: Wellenform des Spurfehlers beim Überfahren der Spur.

Fig. a


oscilloscope
[SERVO BOARD]
– Conductor Side –
+
–
RV14
IC12
RV13
IC13
TE
FE
RV12
PLCK
RF
IC11
RV11
Volt/Div: 200 m V
Time/Div: 0.5 μSec
$1.0^{+0.3}_{-0.1}$ Vp-p

Ⓖ

# Electrical Adjustment

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18 " when indicated.
3. Power supply voltage: DC 14,4 V (more than 3 A).

## Focus Offset Adjustment (Fig. a)

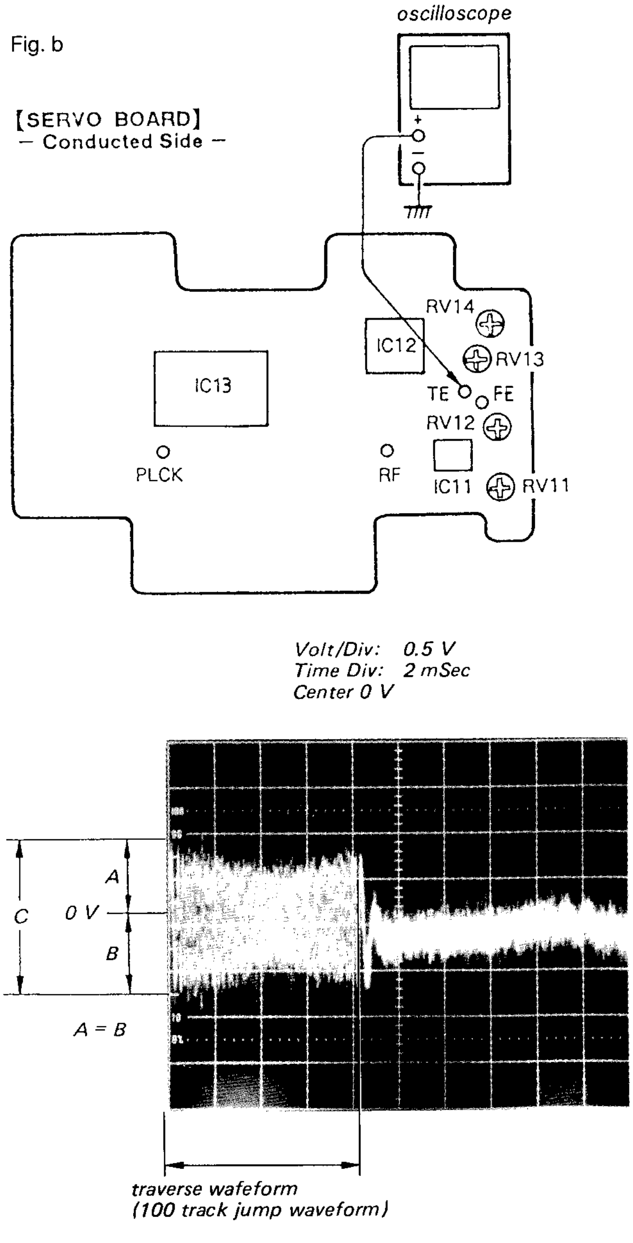
1. Connect the oscilloscope to Servo board test point RF.
2. Put the set into play mode by loading the disc.
3. Adjust (Servo board) RV 12 so that the oscilloscope waveform eye pattern is good .
   A good eye pattern means that the diamond shape ( ◊ ) in the center of the oscilloscope can be clearly distinguished and maximum amplitude is registered.

## Tracking Offset Adjustment (Fig. b)

1. Connect the oscilloscope to Servo board test point TE, Pin 1 of IC 11.
2. Put the set into play mode by loading the disc.
3. Press the ∧ or ∨ button, then check the traverse waveform.*
4. Adjuste RV 11 (Servo board) so that oscilloscope reading is symmetrcal in relation to 0V.

* Traverse waveform:This is the tracking error waveform appears when crossing the track.

Fig. b


oscilloscope
[SERVO BOARD]
– Conducted Side –
+
–
RV14
IC12
RV13
IC13
TE
FE
RV12
PLCK
RF
IC11
RV11
Volt/Div: 0.5 V
Time Div: 2 mSec
Center 0 V
A
C
0 V
B
A = B
traverse wafeform
(100 track jump waveform)

Ⓓ

## Spurnachführungsverstärkung (Grobeinstellung)

Diese Einstellung muß bei Austausch folgender Teile durchgeführt werden.

- Lasereinheit
- RV 13

Die Einstellungen sollten erst nach durchgeführtem Abgleich des Fokus- und Spurversatzes vorgenommen werden.

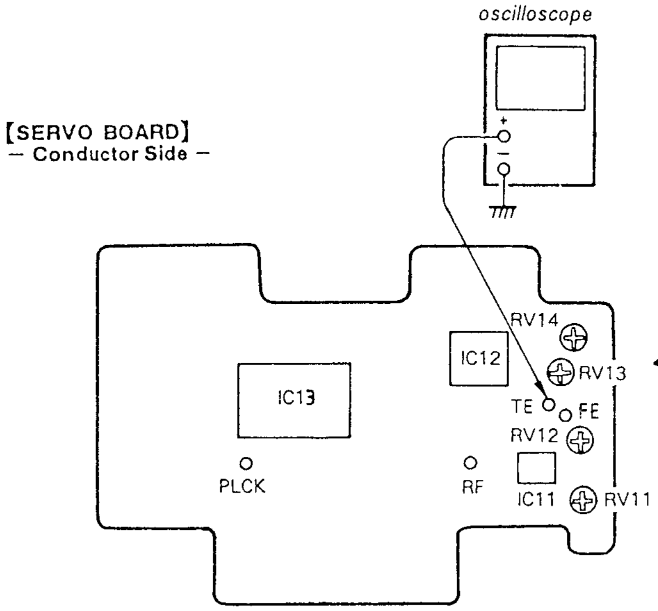
ⒼⒷ

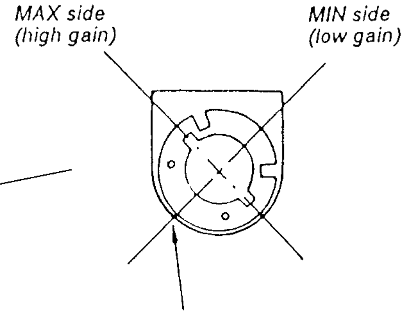
## Tracking Gain Adjustment (coarse adjustment)

This adjustment is to be performed when replacing the following parts.

- Optical Pick-Up Block
- RV 13

This adjustment should be performed after focus offset and tracking offset adjustments are completed.





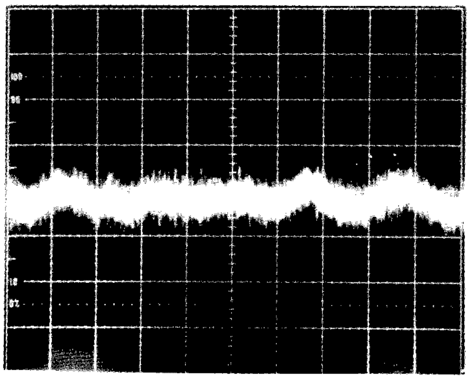
Befindet sich der VR-Kontaktpunkt an dieser Stelle,handelt es sich um die Standardposition.

RV 13 standard position

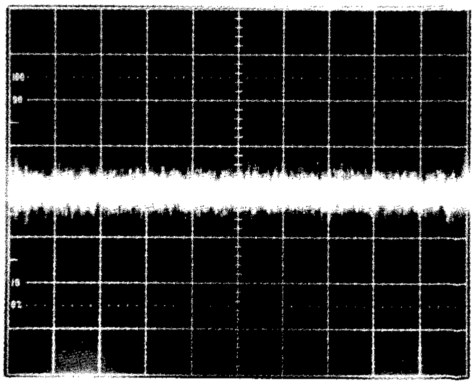
1. Oszilloskop an Testpunkt TE der Servoplatine anschließen.
2. Gerät durch Laden einer CD in Play-Mode setzen.
3. RV 13 der Servoplatine vom Rechtsanschlag zurückdrehen und Wellenform am Oszilloskop überprüfen.
   RV 13 dort fixieren, wo die Wellenform verschwindet.

1. Connect the ocilloscope to Servo board test point TE.
2. Put the set into play mode by loading the disc.
3. Turn servo board RV 13 from clockwise stop, then check the oscilloscope waveform.
   Fix RV 13 at the position where the waveform disappears.

*Volt/Div: 0.5 V*
*Time/Div: 2 mSec*



*waveform when the wave appears*



*waveform when the wave disappeared*

**Bei steigender Verstärkung...**
Hörbare Störgeräusche durch Kratzer oder Staub.
Folge: instabiler Betrieb.

**When gain is highered...**
Operation noise is heard due to a scratch or dust, then operation will be instability.

Ⓓ

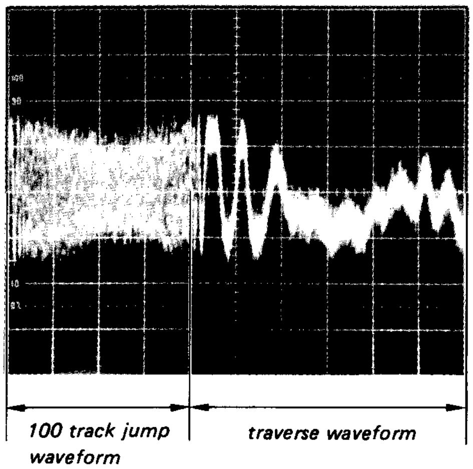
**Bei abfallender Verstärkung...**

Bei Betätigung der Taste Λ oder V ist die Bremswirkung durch die schwache Spurnachführung gering. Deshalb erscheint die Durchgangswellenform im Anschluß an die Wellenform , die nach 100 Spursprüngen erscheint. Dann kann die Auswahl langsam lokalisiert werden.

(GB)

**When gain is lowered...**

When selecting by pressing Λ or V button, brake applikation is poor because of low tracking gain. Therefor, the traverse waveform appears after the 100 track jump waveform, then the selection will be located slowly.



## Fokus-Gain Einstellung

Dieser Abgleich wird durchgeführt, wenn die folgenden Teile gewechselt werden.

- Lasereinheit
- RV 14

Vorgang:

1. RV 14 (Servo-Platte) in die Standard-Position bringen
2. Prüfen, ob kein unnormales Betriebsgeräusch (Rauschen, Zirpen) von der Lasereinheit erzeugt wird. Wenn ja, ist RV 14 etwas im Uhrzeigersinn zu verstellen.

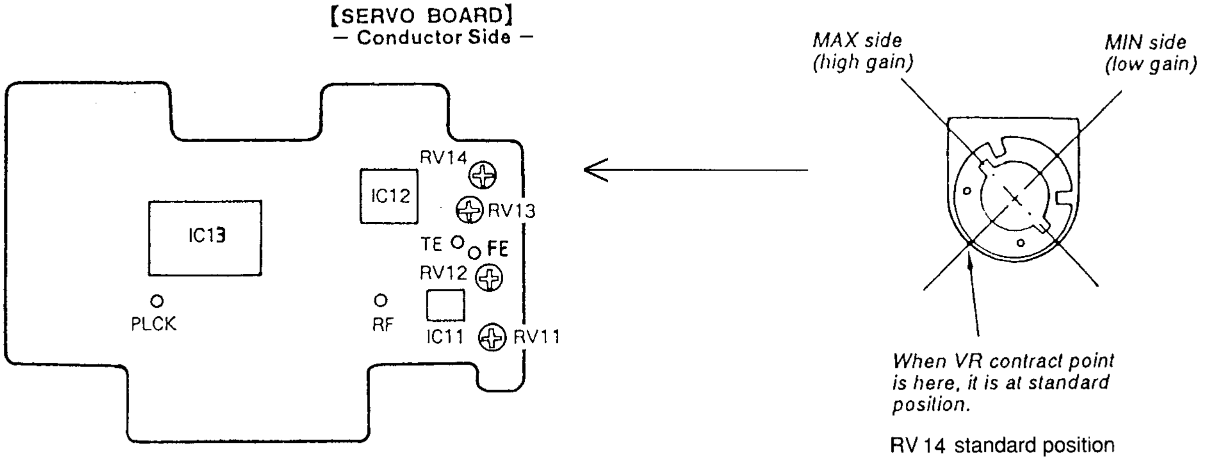
## Focus Gain Adjustment

This adjustment is to be performed when replacing the following parts.

- Optical Pick-Up Block
- RV 14

Procedure:

1. Set RV 14 (Servo board) to the standard position.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis device. If there is, turn RV 14 slightly clockwise.



*When VR contract point is here, it is at standard position.*

RV 14 standard position

**Bei steigender Verstärkung...**

Hörbare Störgeräusche durch Kratzer oder Staub.
Folge: instabiler Betrieb.

**Bei abfallender Verstärkung...**

Die Autofokus-Funktion setzt ganz aus, keine Wiedergabe.

**When gain is highered...**

Operation noise is heard due to a scratch or dust, then operation will be instability.

**When gain is lowered...**

The set does not play because of no focus operation.

Ⓓ

## Überprüfen der PLL-Freilauffrequenz

Vorgang:

1. Frequenzzähler an IC 13 Pin 41 PLCK auf der Servoplatte anschließen.
2. Überprüfen, ob die Frequenz 4,3218 MHz ± 20 kHz beträgt.

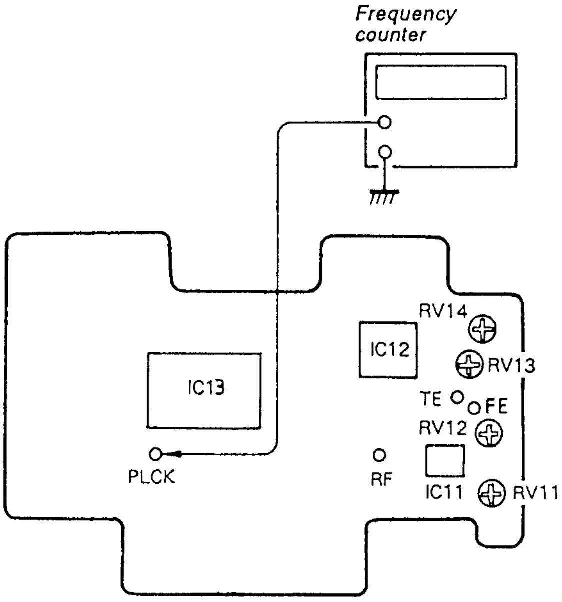
(GB)

## PLL Freerun Frequency Check

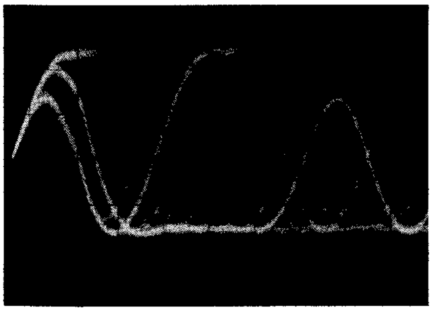
Procedure:

1. Connect the frequency counter to Servo board test point PLCK (IC 13 Pin 41).
2. Confirm the frequency is 4,3218 MHz ± 20 kHz.

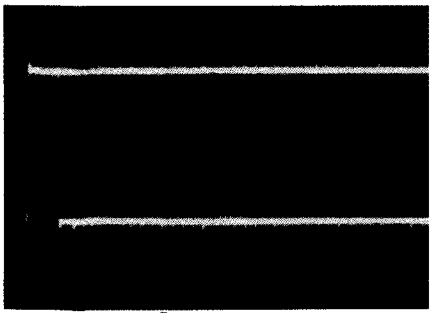
[SERVO BOARD] – Conductor Side –


Frequency counter
RV14
IC12
RV13
IC13
TE
FE
RV12
PLCK
RF
IC11
RV11

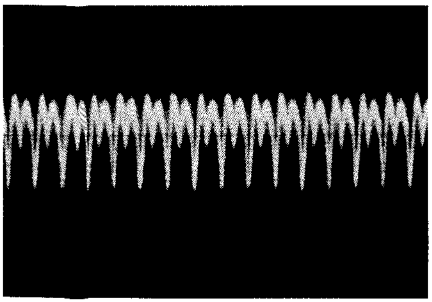
## Diagramme / Waveforms



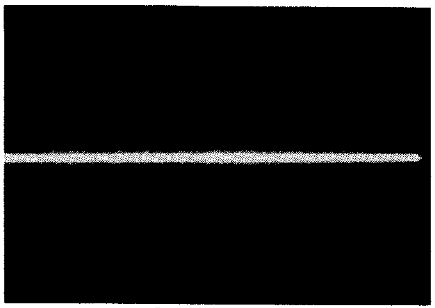
❶ TP
0.2 V/div, 0.5 μsec



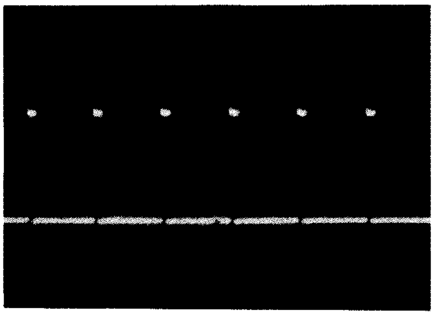
❷ IC11 pin ⑧
1 V, 1 μsec



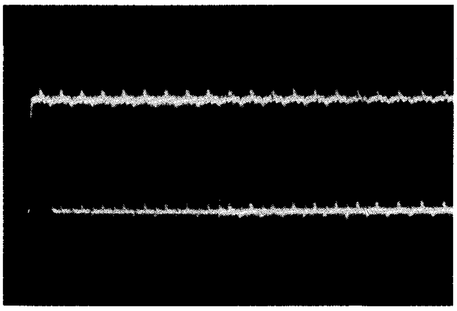
❸ IC12 pin ㉜
0.1 mVp-p, 0.2 μsec



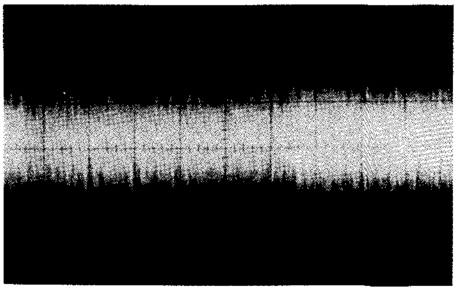
❹ IC16 pin ③
0.5 Vp-p, 50 μsec



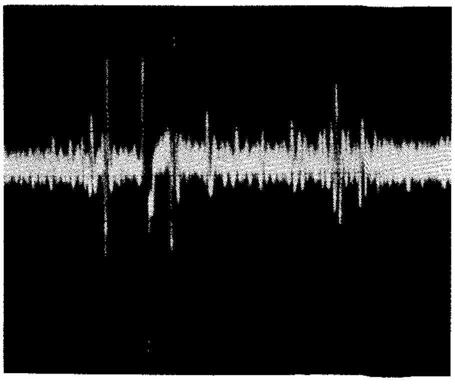
❺ IC16 pin ④
2 Vp-p, 5 μsec



❻ IC301 pin ⑤
2 Vp-p, 1 μsec



❼ IC11 pin ①
0.2 Vp-p, 5 msec



❽ IC11 pin ㉜
0.1 Vp-p, 5 msec

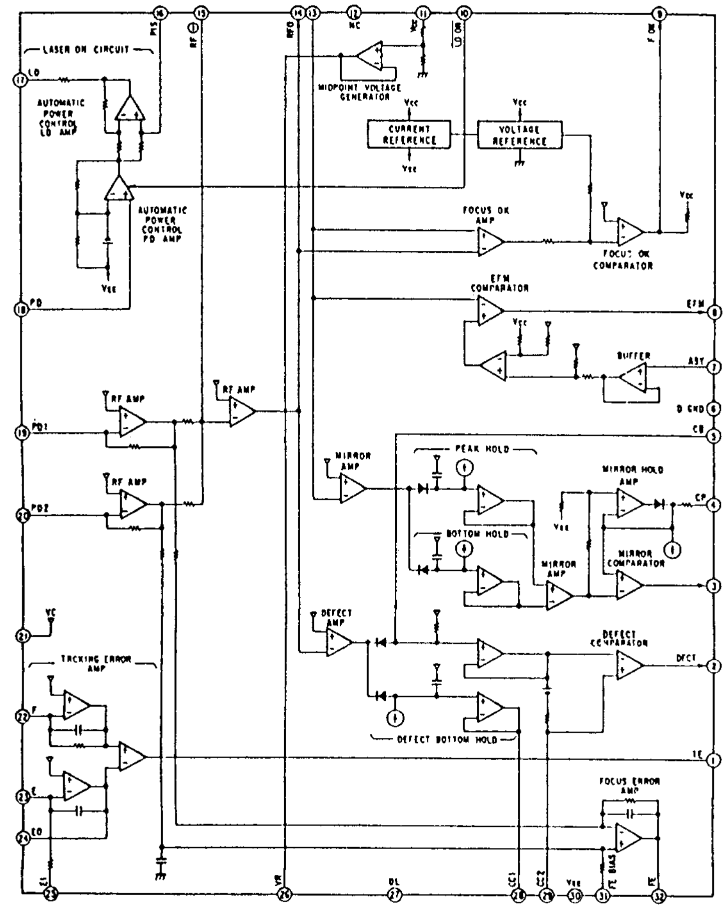
Ⓓ

# Interne Darstellung der IC´s

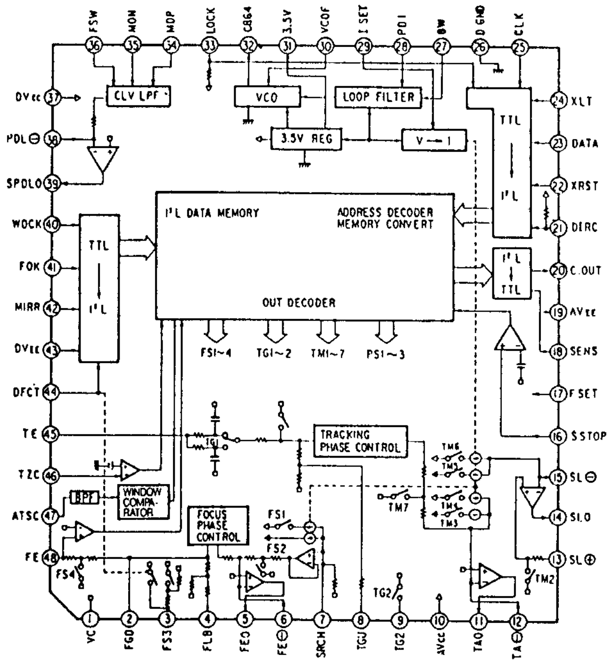
(GB)

# Internal representation of IC´s

## IC11 CXA1081Q


LASER ON CIRCUIT
LD
AUTOMATIC POWER CONTROL LD AMP
AUTOMATIC POWER CONTROL PD AMP
Vcc
PD
PD1
PD2
RF AMP
RF AMP
RF AMP
VC
TRCKING ERROR AMP
F
E
EO
EI
P/S
RF ⊖
RFO
NC
Vcc
LD ON
F OK
MIDPOINT VOLTAGE GENERATOR
CURRENT REFERENCE
VOLTAGE REFERENCE
FOCUS OK AMP
FOCUS OK COMPARATOR
EFM COMPARATOR
EFM
BUFFER
ASY
D GND
CB
PEAK HOLD
BOTTOM HOLD
MIRROR AMP
MIRROR HOLD AMP
MIRROR AMP
MIRROR COMPARATOR
CP
DEFECT AMP
DEFECT COMPARATOR
DFCT
DEFECT BOTTOM HOLD
TE
FOCUS ERROR AMP
VR
DL
CC1
CC2
Vee
FE BIAS
FE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

## IC12 CXA1182Q-Z


FSW
MON
MDP
LOCK
C864
3.5V
VCOF
I SET
PDI
BW
D GND
CLK
DVcc
PDL⊖
SPDLO
WOCK
FOK
MIRR
DVee
DFCT
TE
TZC
ATSC
FE
XLT
DATA
XRST
DIRC
C.OUT
AVee
SENS
F SET
S STOP
SL⊖
SL O
SL⊕
VC
FGO
FS3
FLB
FEO
FE⊖
SRCH
TGU
TG2
AVcc
TAO
TA⊖
CLV LPF
VCO
LOOP FILTER
3.5V REG
V → I
TTL
I²L
I²L DATA MEMORY
ADDRESS DECODER
MEMORY CONVERT
OUT DECODER
FS1~4
TG1~2
TM1~7
PS1~3
TRACKING PHASE CONTROL
FOCUS PHASE CONTROL
WINDOW COMPARATOR
BPF
TG1
TG2
FS1
FS2
FS4
TM2
TM3
TM4
TM5
TM6
TM7
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48

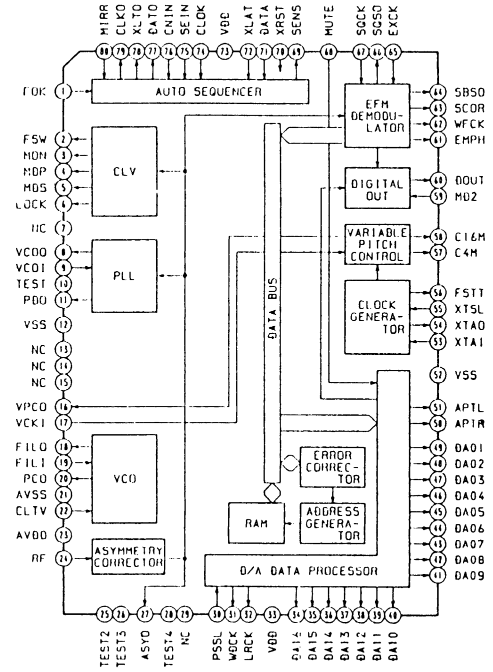
D

## Interne Darstellung der IC´s

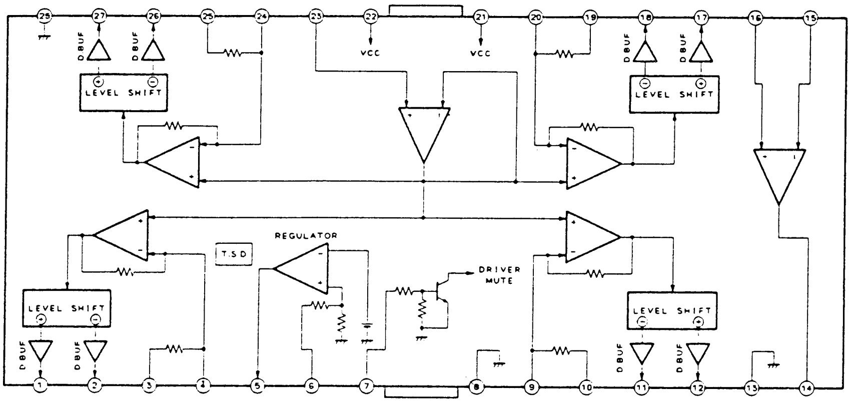
GB

## Internal representation of IC´s

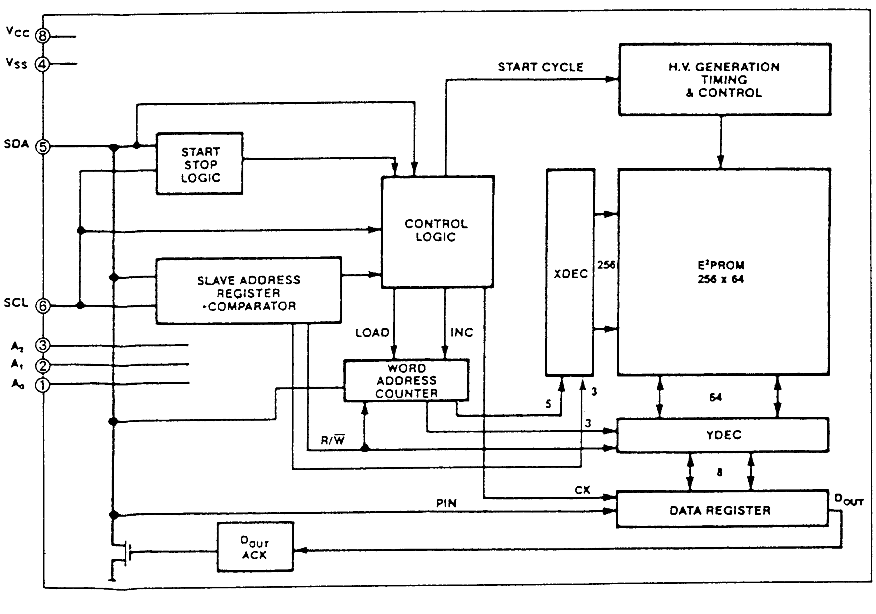
### IC13 CXD2500AQ


MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
AUTO SEQUENCER
FOK
FSW
MON
MDP
MDS
LOCK
NC
VCOO
VCOI
TEST
PDO
VSS
NC
NC
NC
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
CLV
PLL
VCO
ASYMMETRY CORRECTOR
EFM DEMODULATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERATOR
DATA BUS
ERROR CORRECTOR
RAM
ADDRESS GENERATOR
D/A DATA PROCESSOR
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
XTAI
VSS
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
TEST2
TEST3
ASYO
TEST4
NC
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10

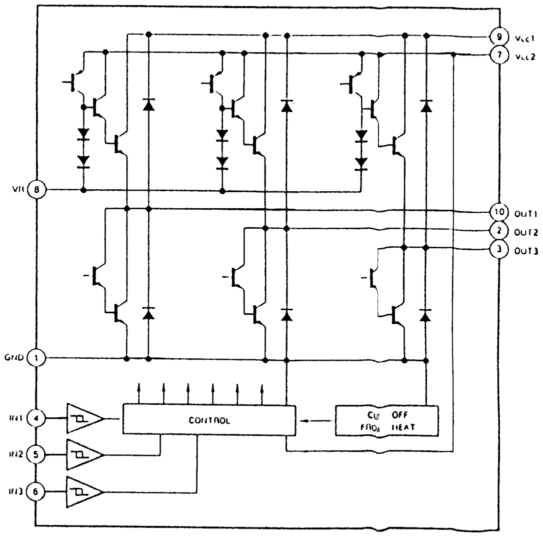
### IC14 BA6296FP

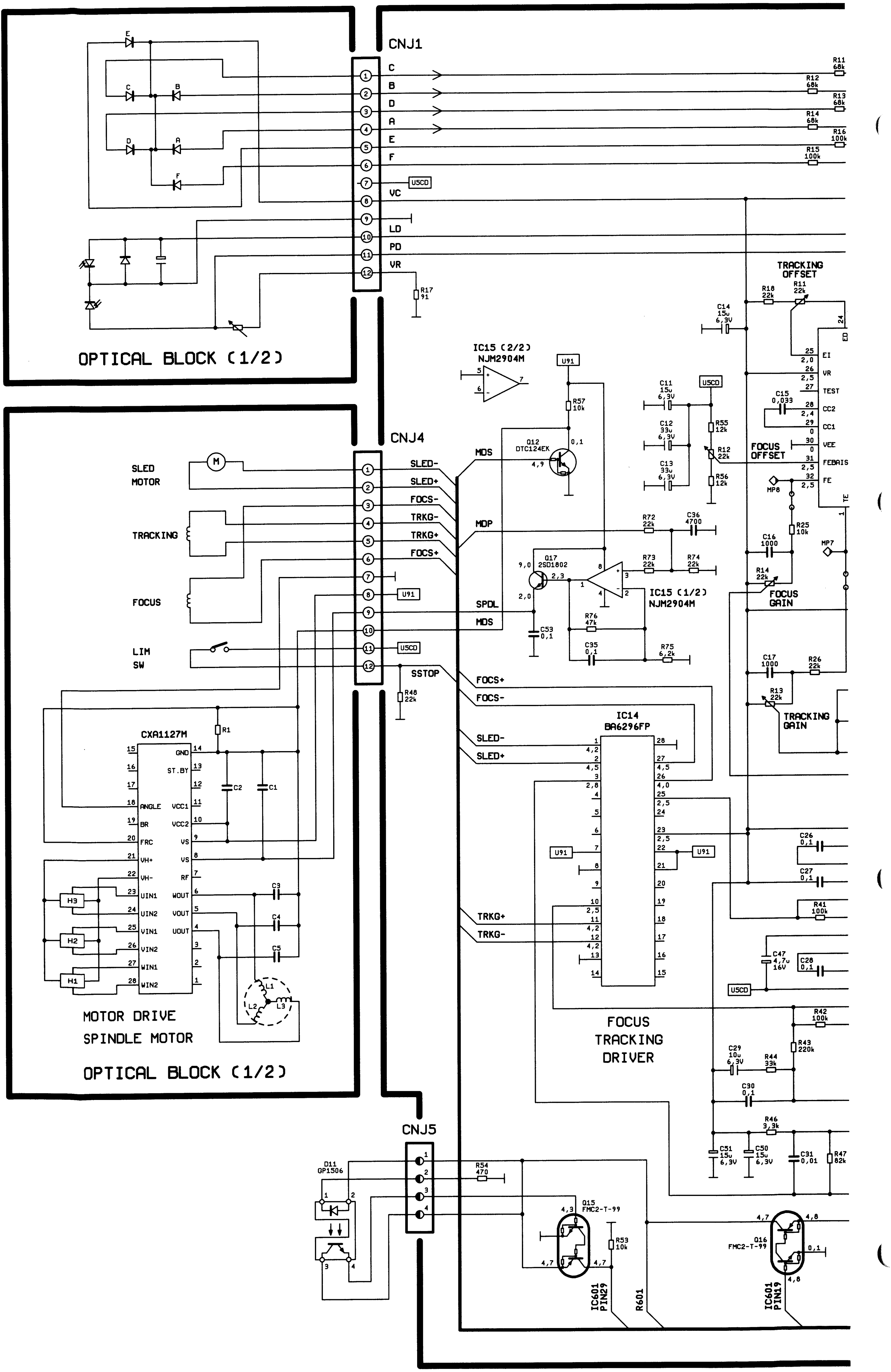

D BUF
LEVEL SHIFT
VCC
VCC
REGULATOR
T.S.D
DRIVER MUTE
28
27
26
25
24
23
22
21
20
19
18
17
16
15
1
2
3
4
5
6
7
8
9
10
11
12
13
14

### IC602 XC24C16SI

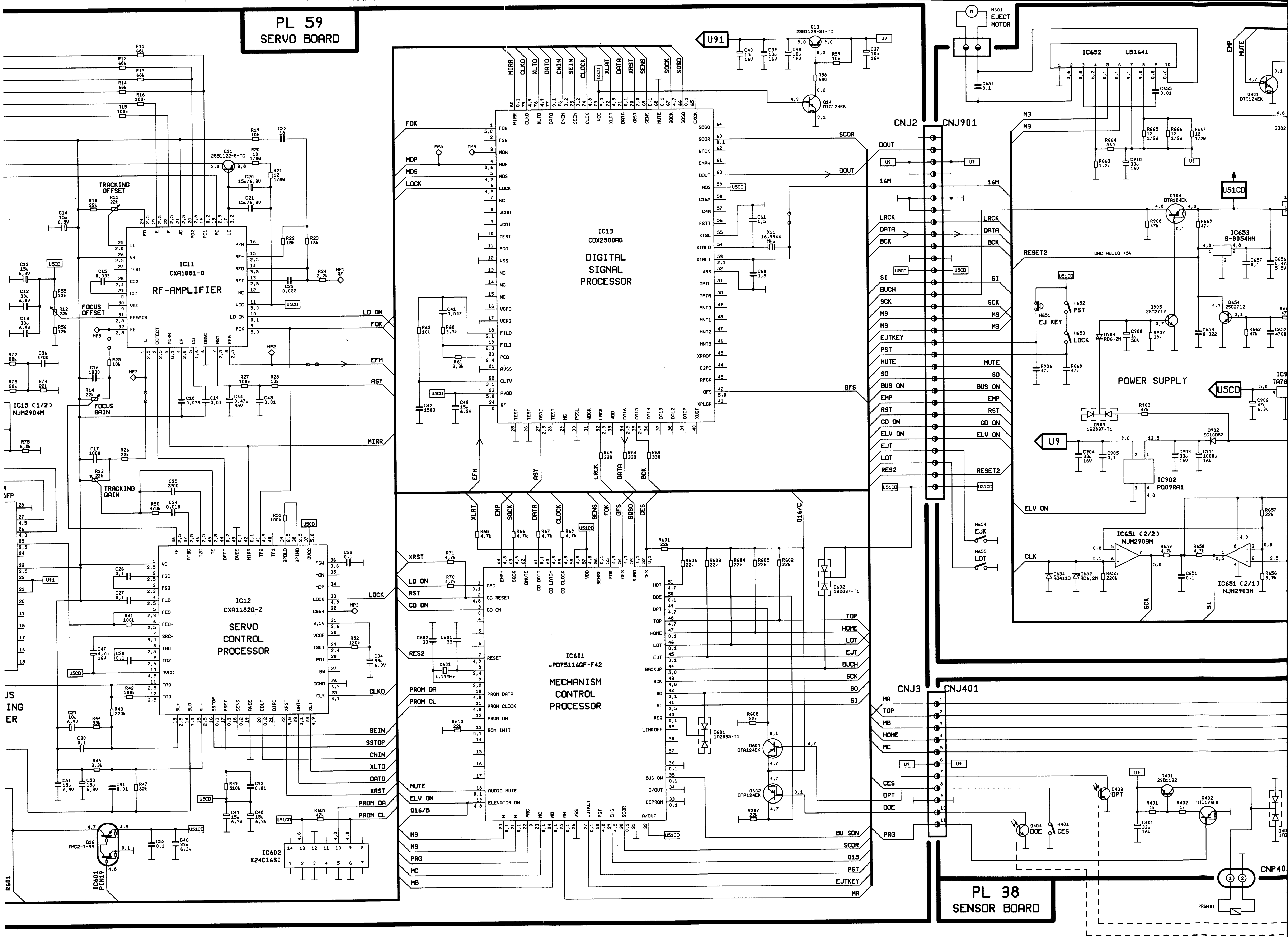

Vcc 8
Vss 4
SDA 5
SCL 6
A2 3
A1 2
A0 1
START STOP LOGIC
SLAVE ADDRESS REGISTER +COMPARATOR
START CYCLE
H.V. GENERATION TIMING & CONTROL
CONTROL LOGIC
XDEC
256
E²PROM 256 x 64
LOAD
INC
WORD ADDRESS COUNTER
5
3
64
3
R/W̄
YDEC
8
PIN
CK
DATA REGISTER
DOUT
DOUT ACK

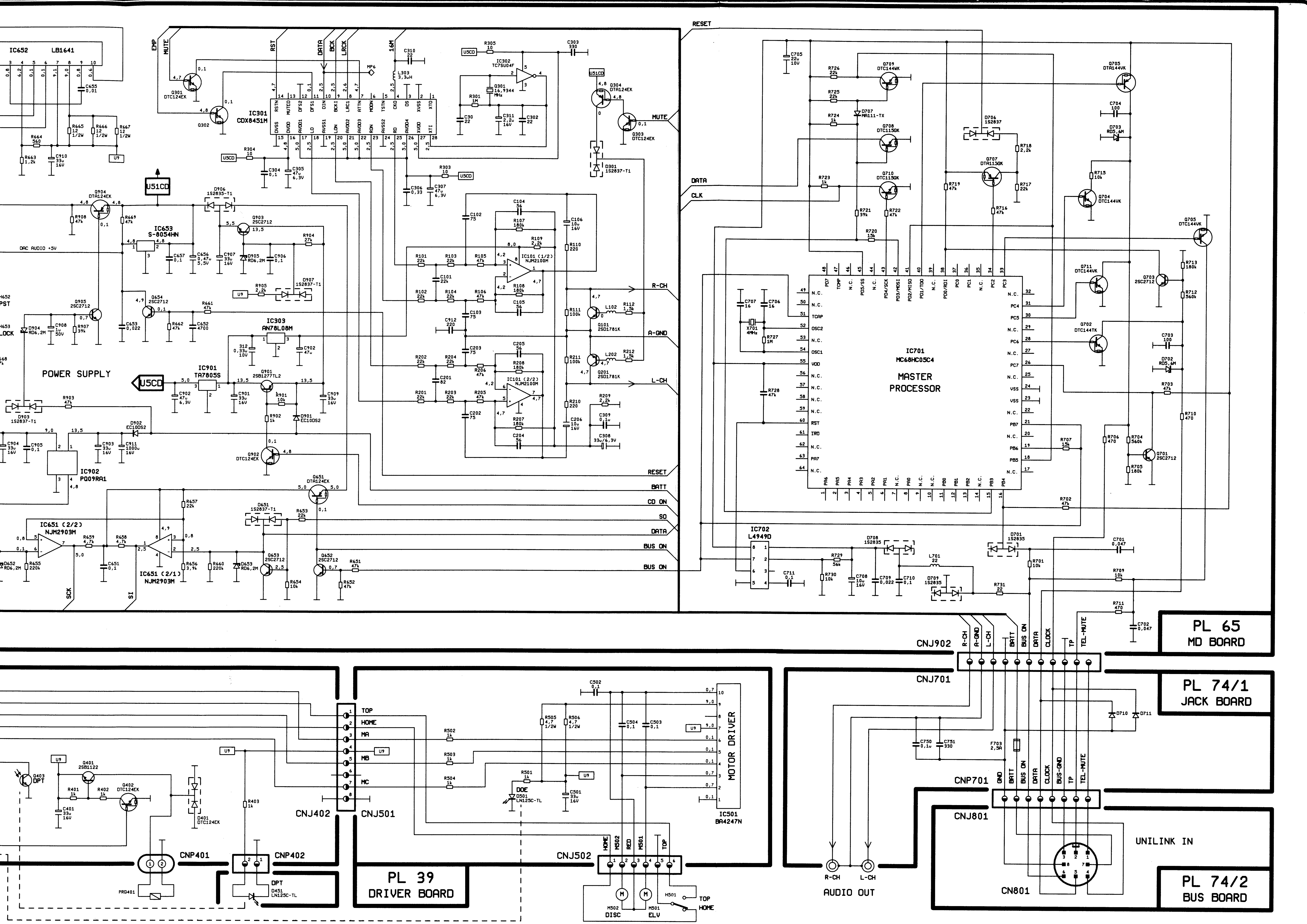
### IC501 BA6247N


9 Vcc1
7 Vcc2
VR 8
10 OUT1
2 OUT2
3 OUT3
GND 1
IN1 4
IN2 5
IN3 6
CONTROL
CUT OFF FROM HEAT



OPTICAL BLOCK (1/2)
CNJ1
C
B
D
A
E
F
VC
LD
PD
VR
U5CD
R17 91
R11 68k
R12 68k
R13 68k
R14 68k
R16 100k
R15 100k
TRACKING OFFSET
R18 22k
R11 22k
C14 15u 6,3V
IC15 (2/2) NJM2904M
U91
R57 10k
Q12 DTC124EK
0,1
4,9
C11 15u 6,3V
C12 33u 6,3V
C13 33u 6,3V
R55 12k
R12 22k
R56 12k
FOCUS OFFSET
C15 0,033
EI
VR
TEST
CC2
CC1
VEE
FEBAIS
FE
TE
ED
MP6
MP7
R25 10k
C16 1000
R14 22k
FOCUS GAIN
R72 22k
C36 4700
Q17 2SD1802
9,0
2,3
2,0
R73 22k
R74 22k
IC15 (1/2) NJM2904M
R76 47k
C35 0,1
R75 6,2k
C53 0,1
C17 1000
R26 22k
R13 22k
TRACKING GAIN
CNJ4
SLED MOTOR
TRACKING
FOCUS
LIM SW
SLED-
SLED+
FOCS-
TRKG-
TRKG+
FOCS+
MDS
MDP
SPDL
SSTOP
R48 22k
FOCS+
FOCS-
SLED-
SLED+
TRKG+
TRKG-
IC14 BA6296FP
R1
CXA1127M
GND
ST.BY
ANGLE
BR
FRC
VH+
VH-
UIN1
UIN2
VIN1
VIN2
WIN1
WIN2
VCC1
VCC2
VS
RF
WOUT
VOUT
UOUT
C1
C2
C3
C4
C5
H1
H2
H3
L1
L2
L3
MOTOR DRIVE
SPINDLE MOTOR
OPTICAL BLOCK (1/2)
FOCUS TRACKING DRIVER
C26 0,1
C27 0,1
R41 100k
C47 4,7u 16V
C28 0,1
R42 100k
R43 220k
C29 10u 6,3V
R44 33k
C30 0,1
R46 3,3k
C51 15u 6,3V
C50 15u 6,3V
C31 0,01
R47 82k
CNJ5
D11 GP1506
R54 470
Q15 FMC2-T-99
4,3
4,7
R53 10k
IC601 PIN29
R601
Q16 FMC2-T-99
4,8
IC601 PIN19

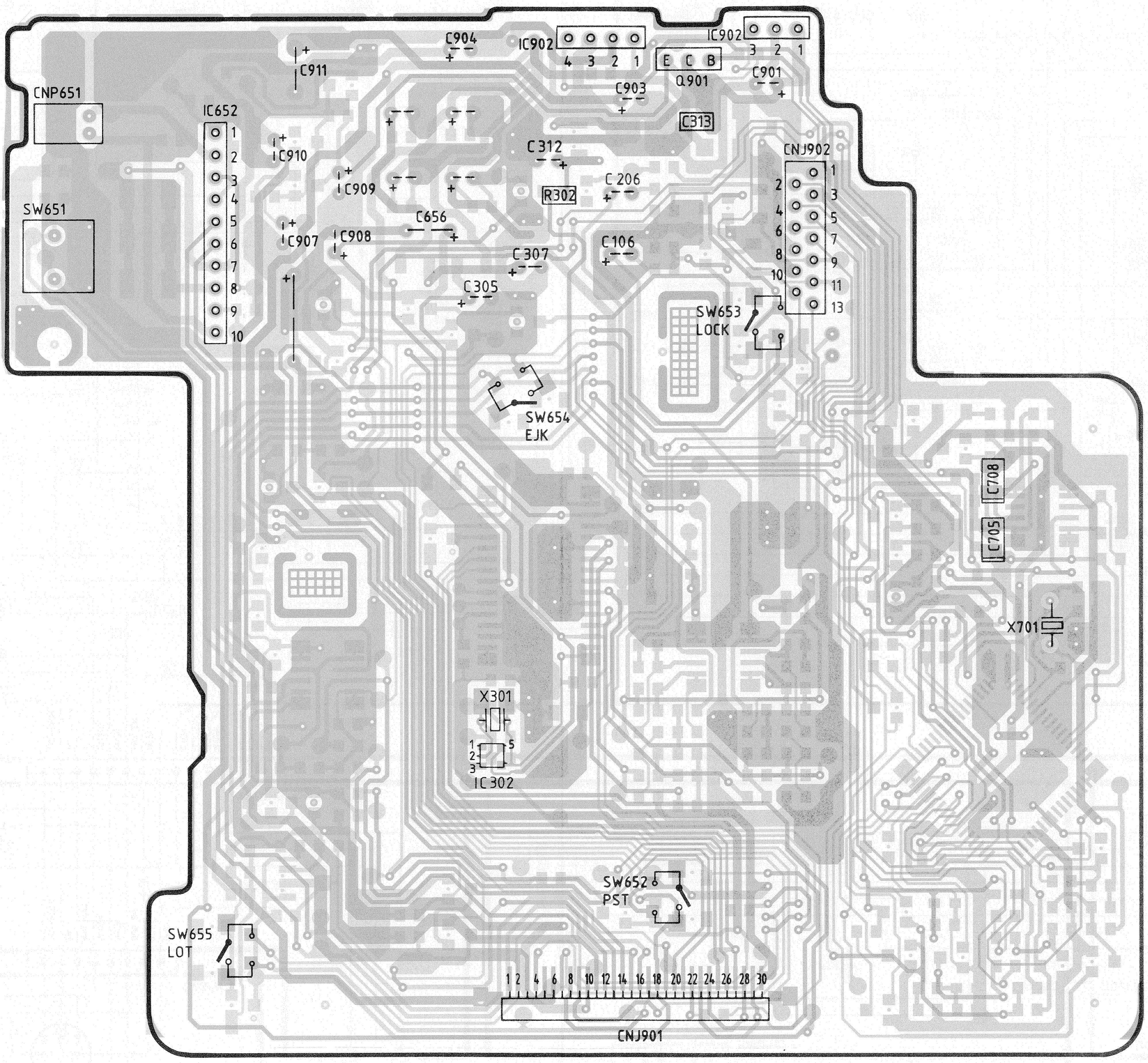

PL 59
SERVO BOARD
IC11
CXA1081-Q
RF-AMPLIFIER
TRACKING OFFSET
FOCUS OFFSET
FOCUS GAIN
TRACKING GAIN
IC15 (1/2)
NJM2904M
IC12
CXA1182Q-Z
SERVO CONTROL PROCESSOR
IC13
CDX2500AQ
DIGITAL SIGNAL PROCESSOR
X11
16,9344 MHz
IC601
uPD75116GF-F42
MECHANISM CONTROL PROCESSOR
X601
4,19MHz
IC602
X24C16SI
Q16
FMC2-T-99
IC601 PIN19
Q11
2SB1122-S-TD
Q13
2SB1123-ST-TD
Q14
DTC124EK
Q601
DTA124EK
Q602
DTA124EK
D601
1A2835-T1
D602
1S2837-T1
U91
U9
U5CD
U51CD
LD ON
FOK
EFM
ASY
MIRR
MDP
MDS
LOCK
SCOR
DOUT
GFS
XRST
RST
CD ON
RES2
PROM DA
PROM CL
MUTE
ELV ON
Q16/B
M3
PRG
MC
MB
SEIN
SSTOP
CNIN
XLTO
DATO
XRST
PROM DA
PROM CL
CLKO
TOP
HOME
LOT
EJT
BUCH
SCK
SO
SI
BU SON
SCOR
Q15
PST
EJTKEY
MA
CNJ2
CNJ901
DOUT
16M
LRCK
DATA
BCK
SI
BUCH
SCK
M3
EJTKEY
PST
MUTE
SO
BUS ON
EMP
RST
CD ON
ELV ON
EJT
LOT
RES2
RESET2
M601
EJECT MOTOR
IC652
LB1641
Q301
DTC124EK
Q302
Q904
DTA124EK
IC653
S-8054HN
DAC AUDIO +5V
H651
EJ KEY
H652
PST
H653
LOCK
Q905
2SC2712
Q654
2SC2712
D904
RD6,2M
POWER SUPPLY
D903
1S2837-T1
D902
EC10DS2
IC902
PQ09RA1
H654
EJK
H655
LOT
CLK
D654
RB411D
D652
RD6,2M
IC651 (2/2)
NJM2903M
IC651 (2/1)
NJM2903M
CNJ3
CNJ401
MA
TOP
MB
HOME
MC
CES
DPT
DOE
PRG
Q401
2SB1122
Q402
DTC124EK
Q403
DPT
Q404
DOE
H401
CES
PL 38
SENSOR BOARD
CNP40
PRG401



IC652 LB1641
IC301 CDX8451M
IC302 TC7SU04F
X301 16,9344 MHz
L303 3,3uH
MP6
EMP
MUTE
RST
DATA
BCK
LRCK
16M
Q301 DTC124EK
Q302
Q303 DTC124EK
Q304 DTA124EK
D301 1S2837-T1
U51CD
U5CD
U9
RESET
DATA
CLK
MUTE
R-CH
A-GND
L-CH
RESET
BATT
CD ON
SO
DATA
BUS ON
BUS ON
IC101 (1/2) NJM2100M
IC101 (2/2) NJM2100M
Q101 2SD1781K
Q201 2SD1781K
L102
L202
IC653 S-8054HN
DAC AUDIO +5V
Q904 DTA124EK
Q905 2SC2712
Q654 2SC2712
Q903 2SC2712
D906 1S2835-T1
D905 RD6,2M
D907 1S2837-T1
D904 RD6,2M
D903 1S2837-T1
D902 EC10DS2
POWER SUPPLY
IC303 AN78L08M
IC901 TA7805S
Q901 2SB1277TL2
D901 EC10DS2
Q902 DTC124EK
IC902 PQ09RA1
Q651 DTA124EK
D651 1S2837-T1
IC651 (2/2) NJM2903M
IC651 (2/1) NJM2903M
D652 RD6,2M
D653 RD6,2M
Q653 2SC2712
Q652 2SC2712
SCK
SI
IC701 MC68HC05C4
MASTER PROCESSOR
X701 4MHz
Q709 DTC144WK
Q708 DTC115GK
Q710 DTC115GK
Q707 DTA113GK
Q705 DTA144VK
Q704 DTC144VK
Q711 DTC144VK
Q703 2SC2712
Q702 DTC144TK
Q701 2SC2712
D707 MA111-TX
D706 1S2837
D703 RD5,6M
D702 RD5,6M
D701 1S2835
D708 1S2835
D709 1S2835
L701
IC702 L4949D
CNJ902
R-CH A-GND L-CH BATT BUS ON DATA CLOCK TP TEL-MUTE
PL 65
MD BOARD
CNJ701
PL 74/1
JACK BOARD
D710
D711
F703 2,5A
CNP701
GND BATT BUS ON DATA CLOCK BUS-GND TP TEL-MUTE
CNJ801
UNILINK IN
CN801
PL 74/2
BUS BOARD
R-CH L-CH
AUDIO OUT
Q403 DPT
Q401 2SB1122
Q402 DTC124EK
D401 DTC124EK
CNP401
PRG401
CNP402
DPT
D451 LN125C-TL
CNJ402
CNJ501
TOP HOME MA MB MC
PL 39
DRIVER BOARD
DOE
D501 LN125C-TL
IC501 BA4247N
MOTOR DRIVER
CNJ502
HOME M502 RED M501 TOP
M502 DISC
M501 ELV
H501
TOP
HOME

## MD - Board
## Bestückung + Chip

PL 65



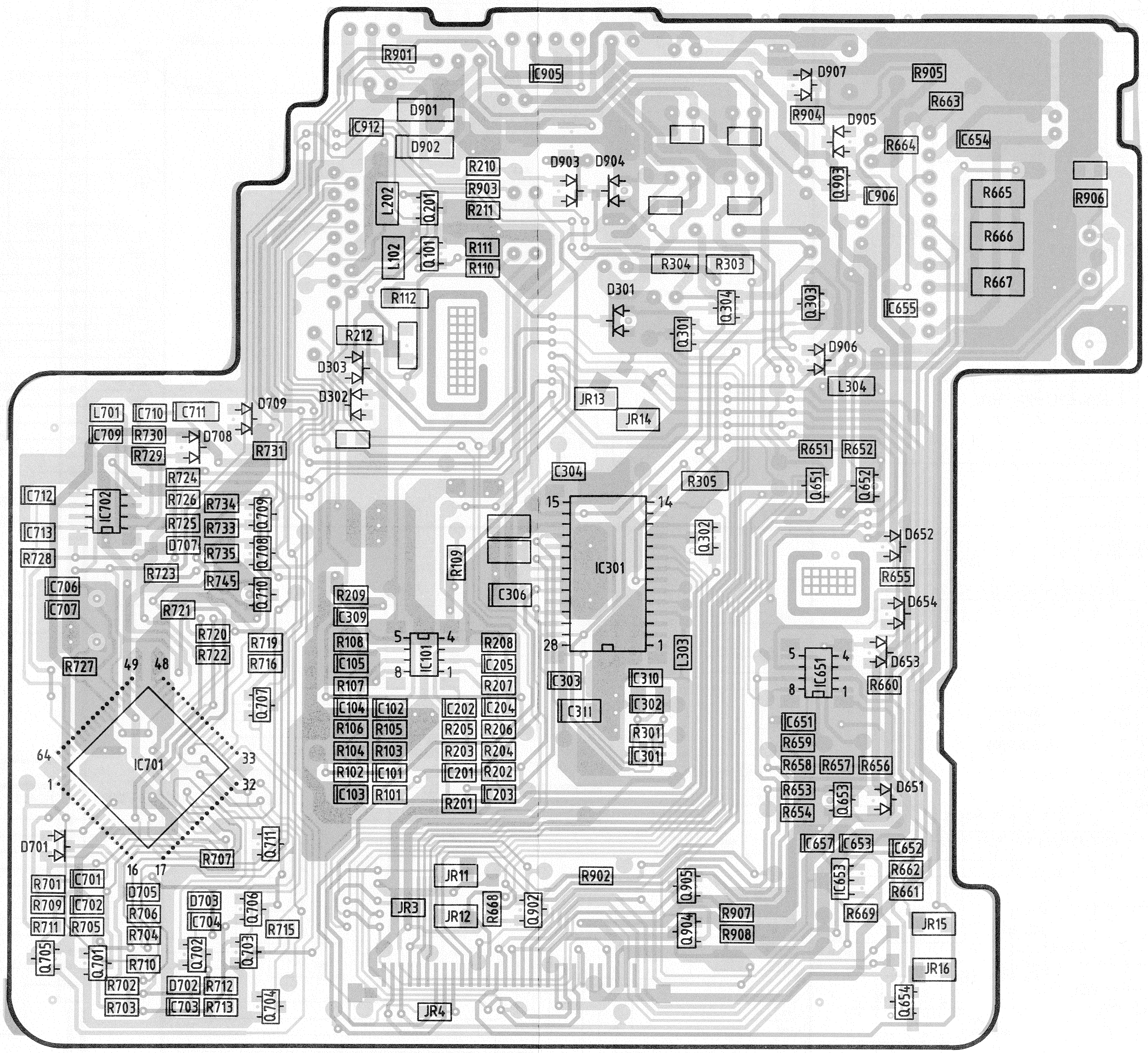
CNP651
SW651
IC652
1
2
3
4
5
6
7
8
9
10
C911
C910
C909
C907
C908
C904
IC902
4 3 2 1
E C B
Q901
IC902
3 2 1
C901
C903
C313
C312
C206
R302
C656
C307
C305
C106
CNJ902
2 4 6 8 10
1 3 5 7 9 11 13
SW653
LOCK
SW654
EJK
C708
C705
X701
X301
1
2
3
5
IC302
SW652
PST
SW655
LOT
1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
CNJ901

MD - Boar
Chip

PL 65

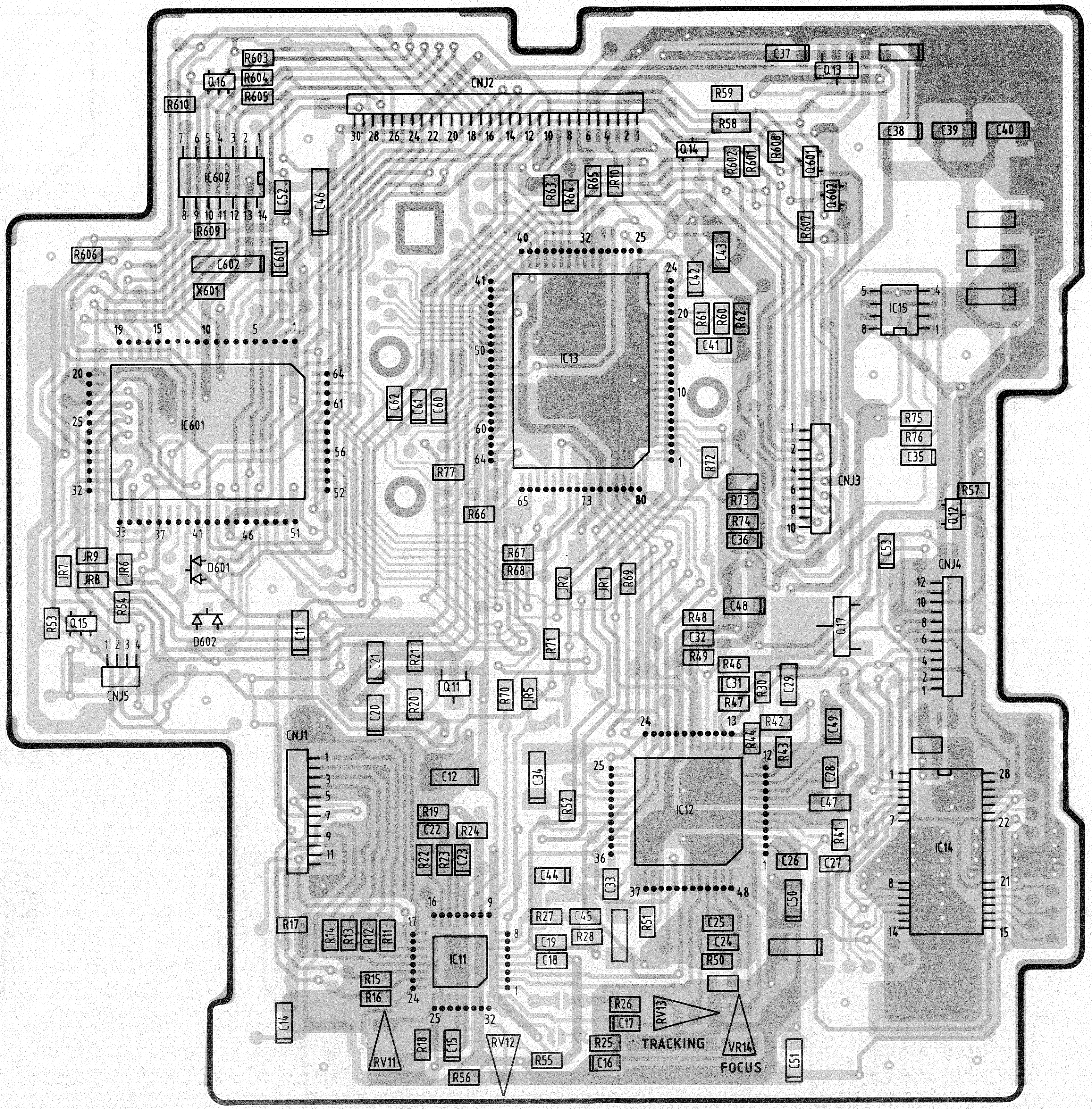
## MD - Board
## Chip

PL 65


R901
C905
D907
R905
R663
D901
C912
R904
D905
D902
R664
C654
R210
D903
D904
R903
Q903
C906
R906
L202
Q201
R211
R665
R111
R666
L102
Q101
R110
R304
R303
R667
R112
D301
Q303
Q304
C655
Q301
R212
D906
D303
D302
JR13
L304
JR14
L701
C710
C711
D709
C709
R730
D708
R731
R729
R651
R652
R724
C304
R305
C712
R726
R734
Q709
Q651
Q652
IC702
R725
R733
15
14
C713
D707
Q302
D652
R728
R735
Q708
R109
R723
R745
IC301
R655
C706
Q710
C306
R209
D654
C707
R721
C309
R720
5
4
R208
R719
R108
IC101
R716
C105
C205
L303
5
4
R722
28
1
IC651
R727
49
48
8
1
D653
R107
R207
C303
C310
8
1
Q707
R660
C104
C102
C202
C204
C311
C302
C651
R106
R105
R205
R206
R301
R659
R104
R103
R203
R204
C301
64
33
R658
R657
R656
IC701
R102
C101
C201
R202
1
32
R653
Q653
D651
C103
R101
C203
R654
R201
Q711
C657
C653
C652
D701
R707
16
17
JR11
R902
R662
R701
C701
Q905
IC653
R661
D705
D703
Q706
R709
C702
R706
C704
JR3
JR12
R668
Q902
R907
R669
R715
R711
R705
R704
Q904
R908
JR15
Q705
Q701
Q702
Q703
R710
JR16
R702
D702
R712
Q704
Q654
R703
C703
R713
JR4

# Servo - Board
# Bestückung + Chip

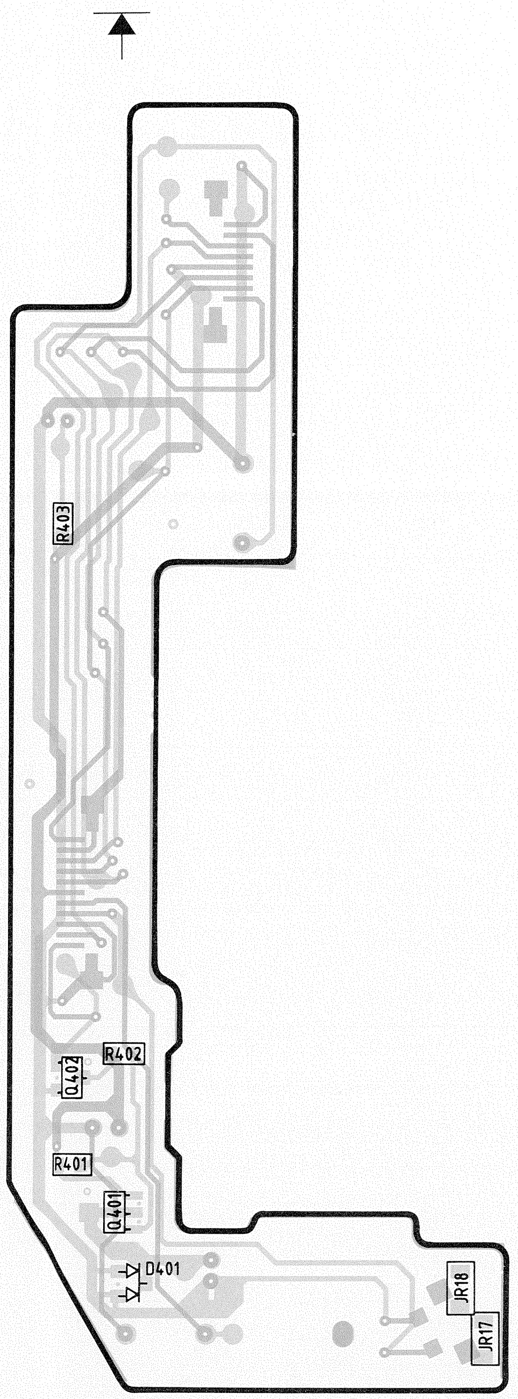
PL 59



CNJ2
CNJ1
CNJ3
CNJ4
CNJ5
IC601
IC602
IC11
IC12
IC13
IC14
IC15
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q601
Q602
D601
D602
X601
C602
C601
R601
R602
R603
R604
R605
R606
R607
R608
R609
R610
RV11
RV12
RV13
VR14
TRACKING
FOCUS

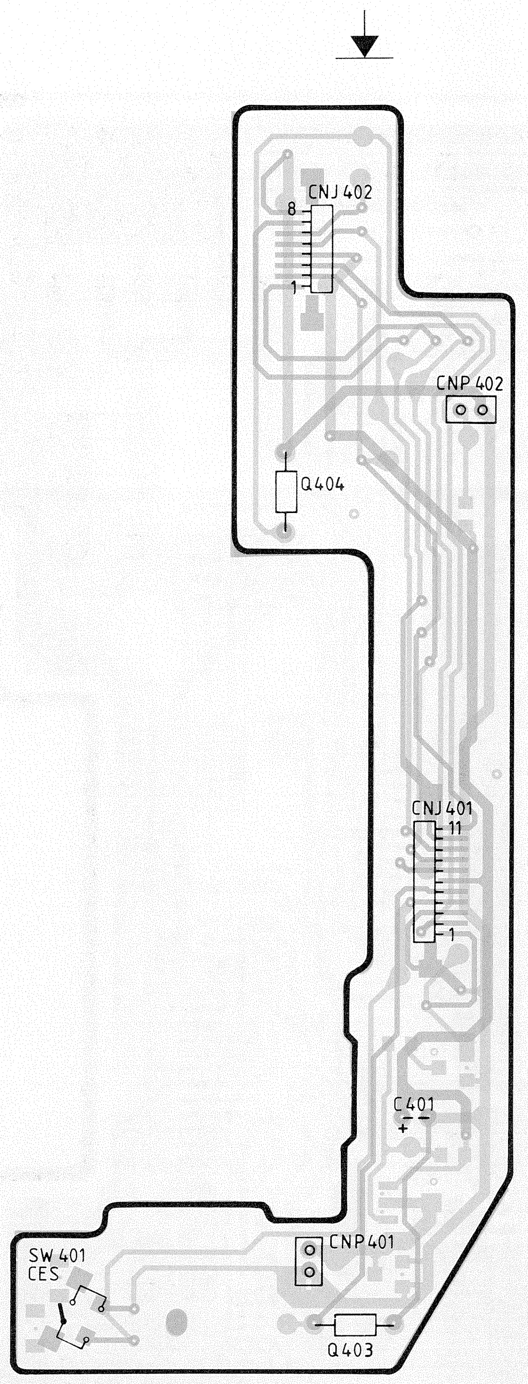
## Sensor - Board Chip

PL 38


R403
R402
Q402
R401
Q401
D401
JR18
JR17

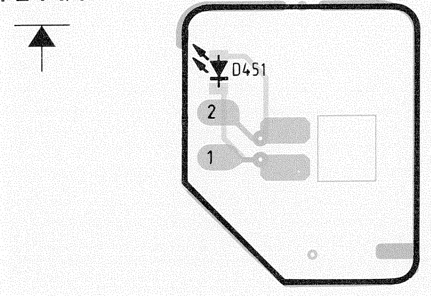
## Sensor - Board Bestückung + Chip

PL 38


CNJ 402
8
1
CNP 402
Q404
CNJ 401
11
1
C401
+
SW 401
CES
CNP 401
Q403

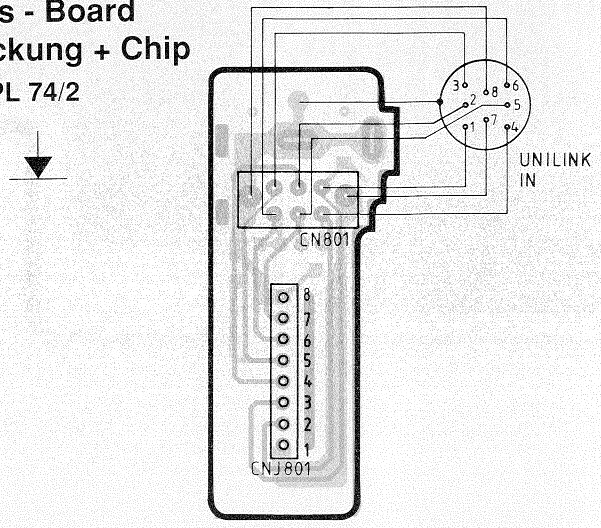
## DTP - Board Chip

PL 74/1



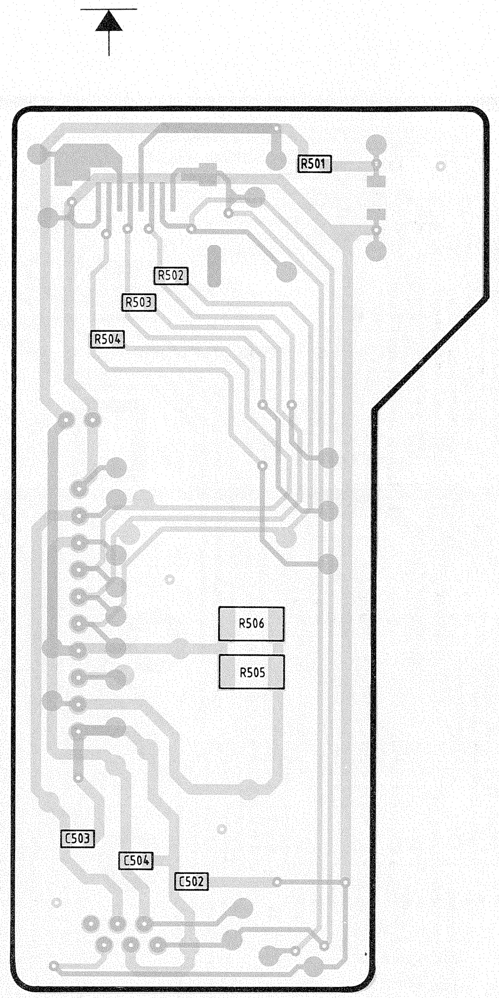
## Bus - Board Bestückung + Chip

PL 74/2


3
6
2
8
5
1
7
4
UNILINK
IN
CN801
8
7
6
5
4
3
2
1
CNJ801

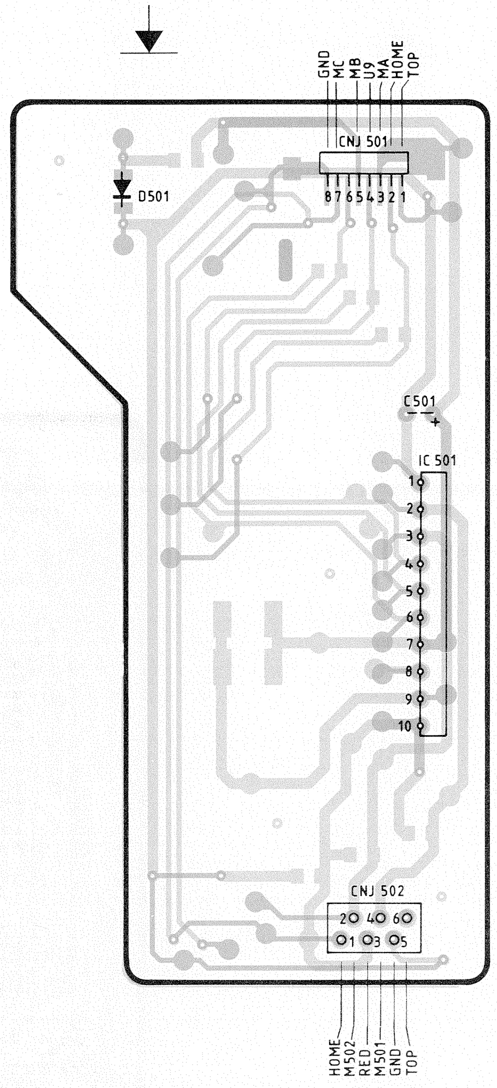
## Driver - Board Chip

PL 39


R501
R502
R503
R504
R506
R505
C503
C504
C502

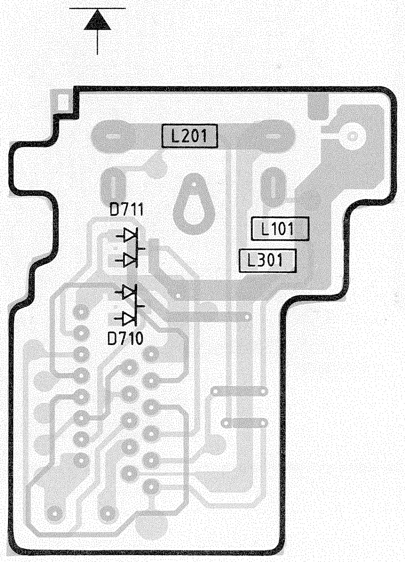
## Driver - Board Bestückung + Chip

PL 39


GND
MC
MB
U9
MA
HOME
TOP
CNJ 501
8 7 6 5 4 3 2 1
D501
C501
+
IC 501
1
2
3
4
5
6
7
8
9
10
CNJ 502
2 4 6
1 3 5
HOME
M502
RED
M501
GND
TOP

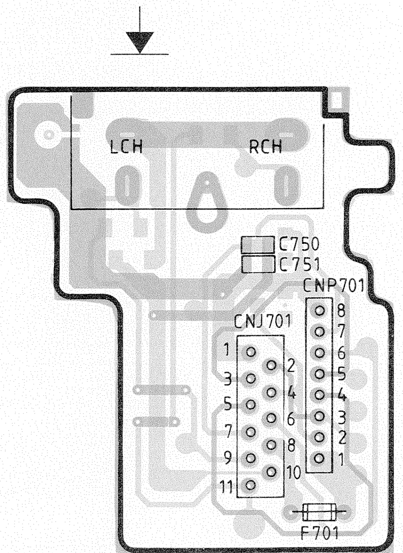
## Jack - Board Chip

PL 74/1


L201
D711
L101
L301
D710

## Jack - Board Bestückung + Chip

PL 74/1


LCH
RCH
C750
C751
CNP701
CNJ701
1
2
3
4
5
6
7
8
9
10
11
8
7
6
5
4
3
2
1
F701

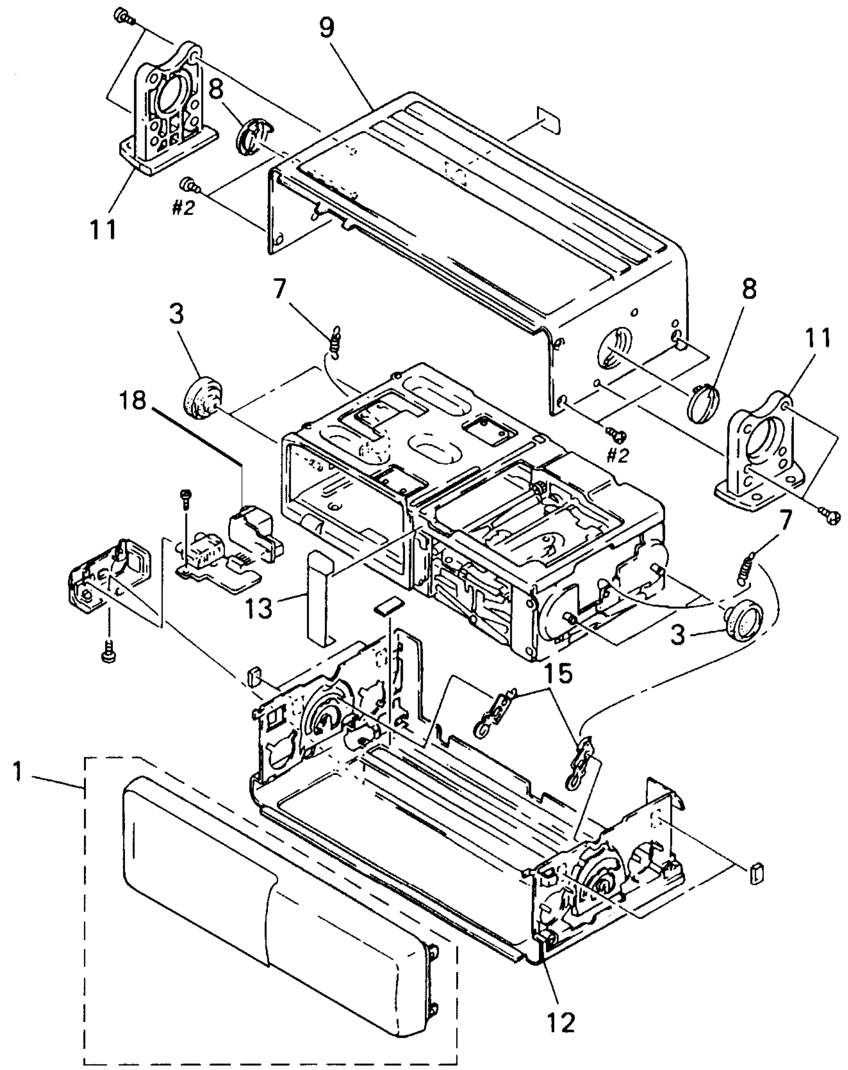
**BLAUPUNKT**
Bosch Telecom

**Autoradio**

# CDC A03
7 607 768 510

## Ersatzteilliste • Spare Parts List

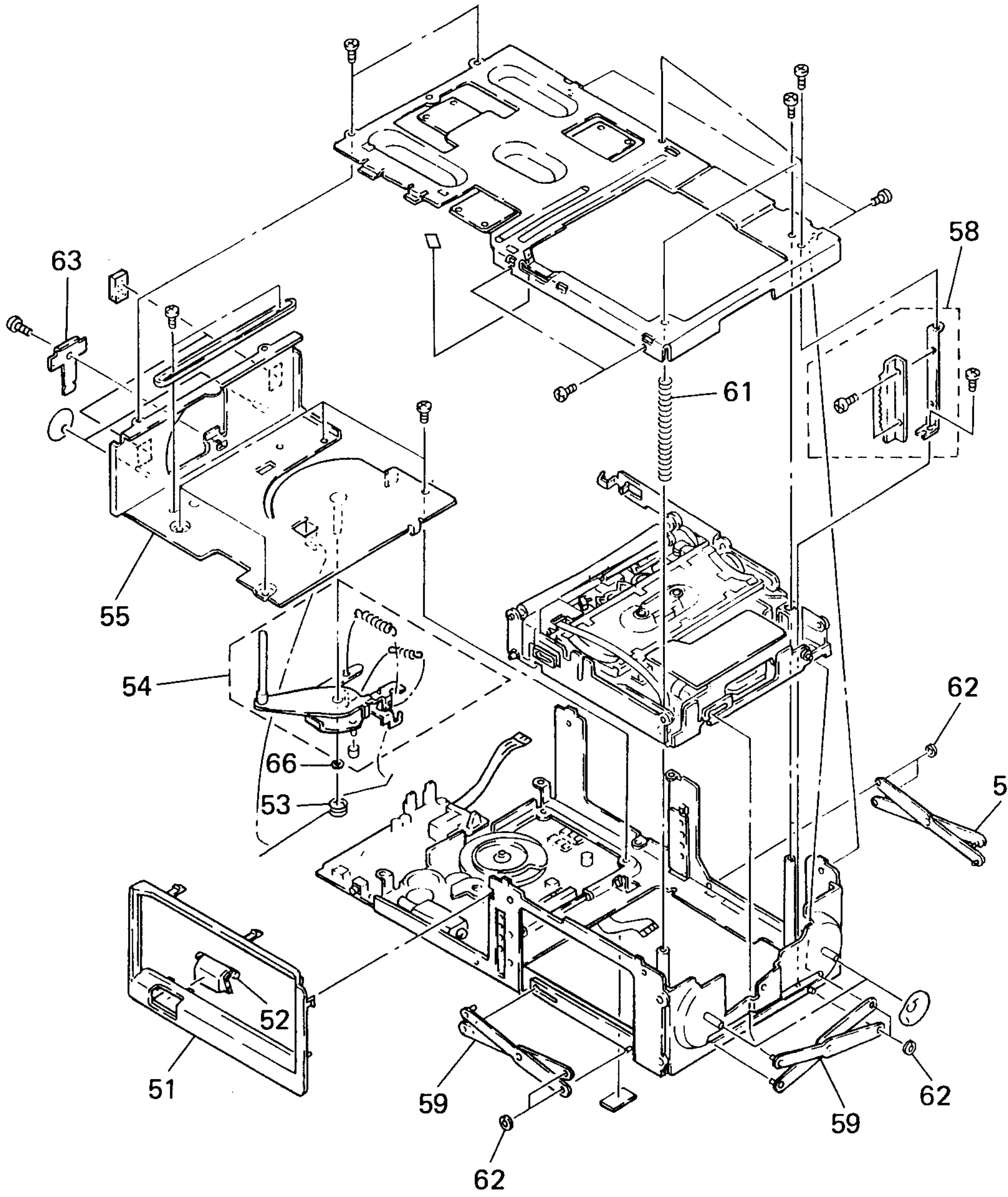
### (1) CASE SECTION



**Mechanische Bauteile**
**Mechanical components**

| Position<br>Position | Bestell-Nr.<br>Part no. | Position<br>Position | Bestell-Nr.<br>Part no. |
|---|---|---|---|
| LW 0001 | 8 619 309 056 | LW 0012 | 8 619 309 051 |
|  |  | LW 0013 | 8 619 319 914 |
| LW 0003 | 8 619 319 913 |  |  |
|  |  | LW 0015 | 8 619 319 710 |
| LW 0007 | 8 619 319 628 |  |  |
| LW 0008 | 8 619 319 012 | LW 0018 | 8 619 329 615 |
| LW 0009 | 8 619 309 050 |  |  |
|  |  | # 2 | 8 619 319 507 |
| LW 0011 | 8 619 309 052 |  |  |

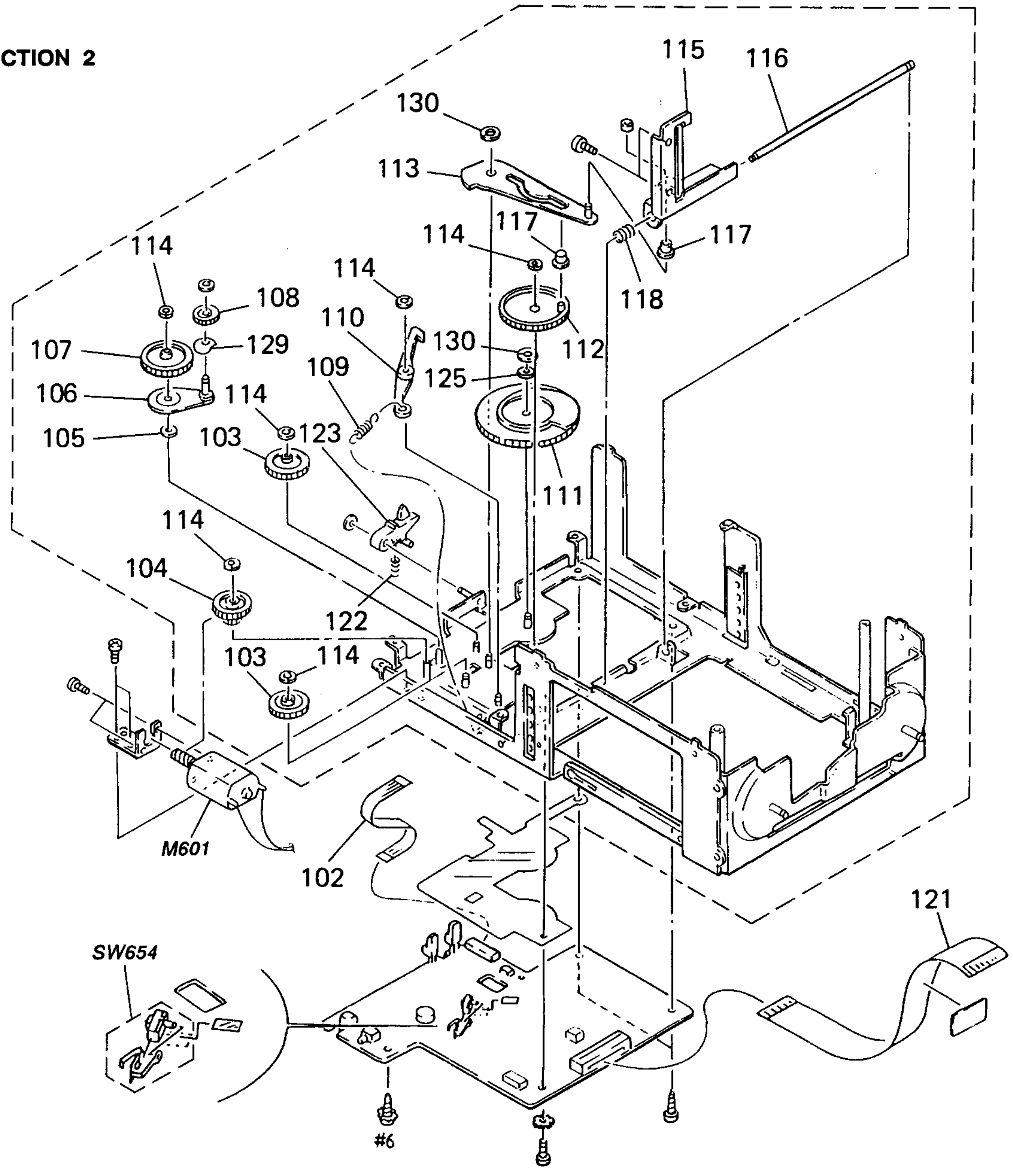
## (2) MD SECTION 1



### Mechanische Bauteile
### Mechanical components

| Position<br>Position | Bestell-Nr.<br>Part no. | Position<br>Position | Bestell-Nr.<br>Part no. |
|---|---|---|---|
| LW 0051 | 8 619 309 053 | LW 0061 | 8 619 319 627 |
| LW 0052 | 8 619 319 013 | LW 0062 | 8 619 319 402 |
| LW 0053 | 8 619 319 626 | LW 0063 | 8 619 319 709 |
| LW 0054 | 8 619 319 706 | | |
| LW 0055 | 8 619 309 048 | LW 0066 | 8 619 319 405 |
| LW 0058 | 8 619 319 707 | | |
| LW 0059 | 8 619 319 708 | | |

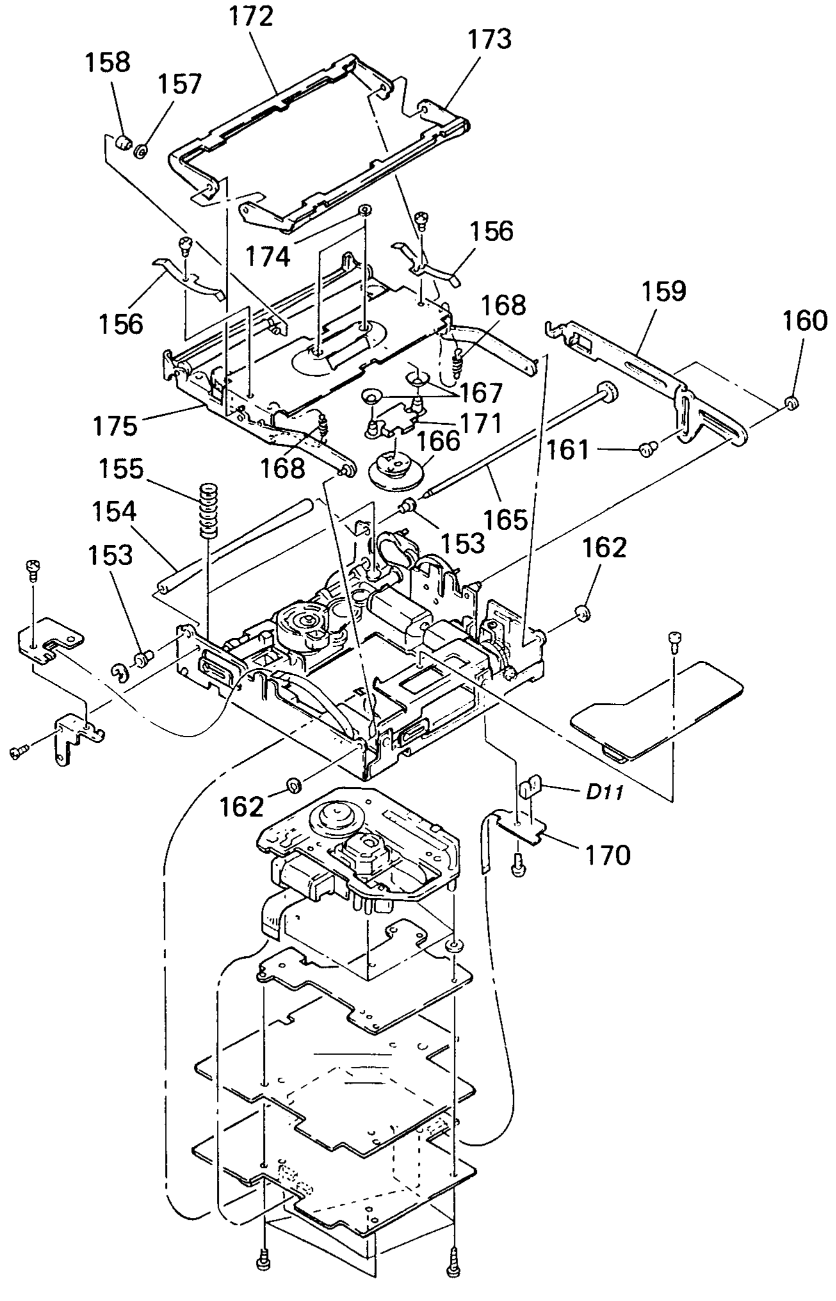
**(3) MD SECTION 2**


115
116
130
113
114
117
117
118
114
108
107
129
114
110
130
112
106
114
109
125
105
103
123
111
114
104
122
103
114
M601
102
121
SW654
#6

**Mechanische Bauteile**
**Mechanical components**

| Position<br>Position | Bestell-Nr.<br>Part no. | Position<br>Position | Bestell-Nr.<br>Part no. |
|---|---|---|---|
| LW 0102 | 8 619 389 105 | LW 0121 | 8 619 389 106 |
| LW 0103 | 8 619 319 343 | LW 0122 | 8 619 319 624 |
| LW 0104 | 8 619 319 344 | LW 0123 | 8 619 319 705 |
| LW 0105 | 8 619 319 407 | | |
| LW 0106 | 8 619 319 702 | LW 0125 | 8 619 319 625 |
| LW 0107 | 8 619 319 336 | | |
| LW 0108 | 8 619 319 345 | | |
| LW 0109 | 8 619 319 623 | LW 0129 | 8 619 319 621 |
| LW 0110 | 8 619 319 703 | | |
| LW 0111 | 8 619 319 346 | | |
| LW 0112 | 8 619 319 347 | M 0601 | 8 619 329 402 |
| LW 0114 | 8 619 319 402 | | |
| LW 0115 | 8 619 319 704 | SW 0654 | 8 619 329 210 |
| LW 0116 | 8 619 319 348 | | |
| LW 0117 | 8 619 319 341 | | |
| LW 0118 | 8 619 511 627 | # 6 | 8 619 511 522 |

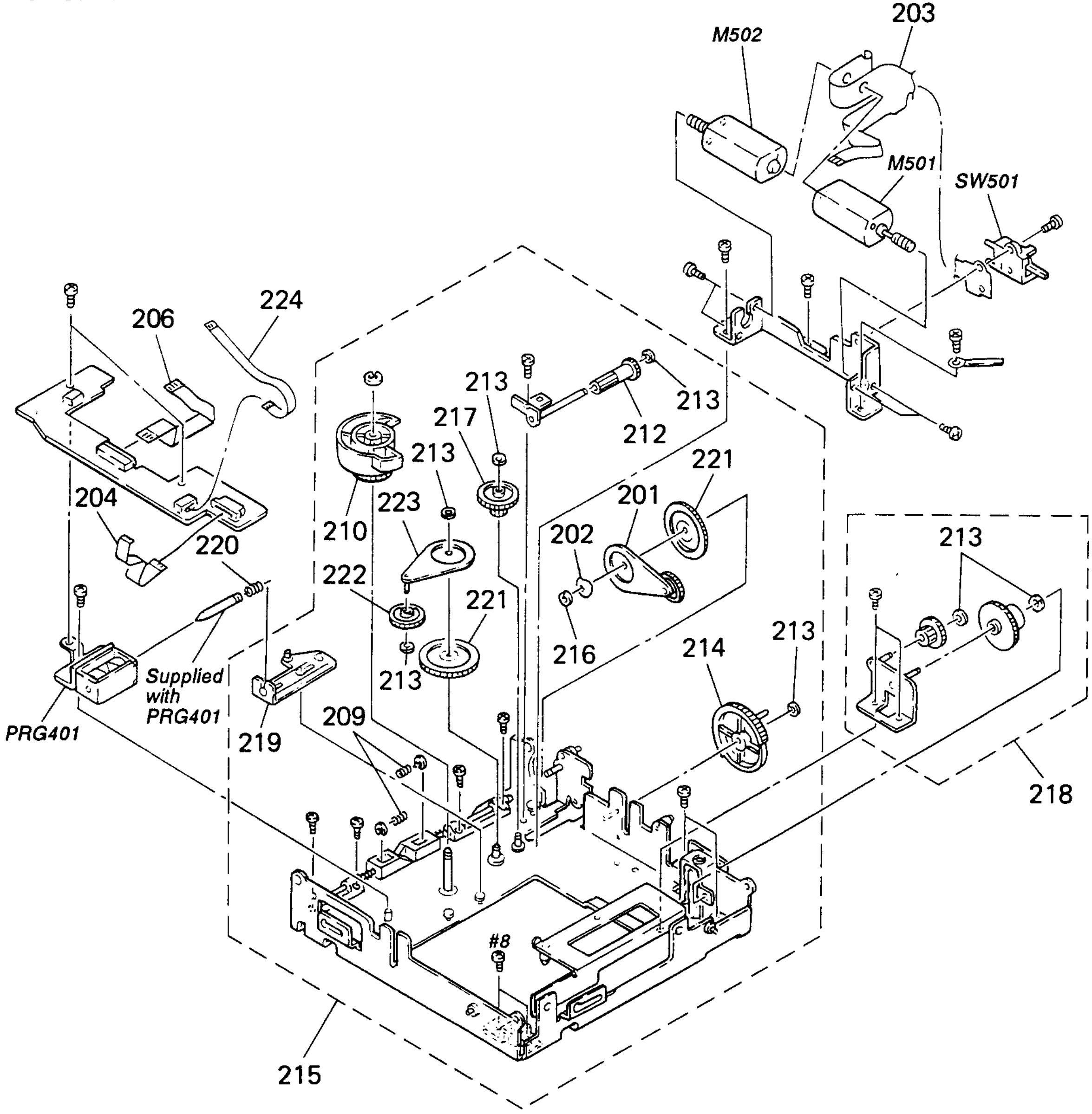
## (4) MD SECTION 3


172
173
158
157
174
156
156
168
159
160
167
175
171
166
161
155
168
154
165
153
153
162
162
D11
170

**Mechanische Bauteile**
**Mechanical components**

| Position<br>Position | Bestell-Nr.<br>Part no. | Position<br>Position | Bestell-Nr.<br>Part no. |
|---|---|---|---|
| D 0011 | 8 945 406 407 | LW 0165 | 8 619 319 196 |
| | | LW 0166 | 8 619 319 342 |
| LW 0153 | 8 619 319 338 | LW 0167 | 8 619 319 621 |
| LW 0154 | 8 619 319 339 | LW 0168 | 8 619 319 622 |
| LW 0155 | 8 619 319 619 | | |
| LW 0156 | 8 619 319 620 | LW 0170 | 8 619 389 104 |
| LW 0157 | 8 619 319 404 | LW 0171 | 8 619 319 197 |
| LW 0158 | 8 619 319 340 | LW 0172 | 8 619 319 198 |
| LW 0159 | 8 619 319 195 | LW 0173 | 8 619 319 199 |
| LW 0160 | 8 619 319 405 | LW 0174 | 8 619 319 406 |
| LW 0161 | 8 619 319 341 | LW 0175 | 8 619 319 701 |
| LW 0162 | 8 619 319 402 | | |

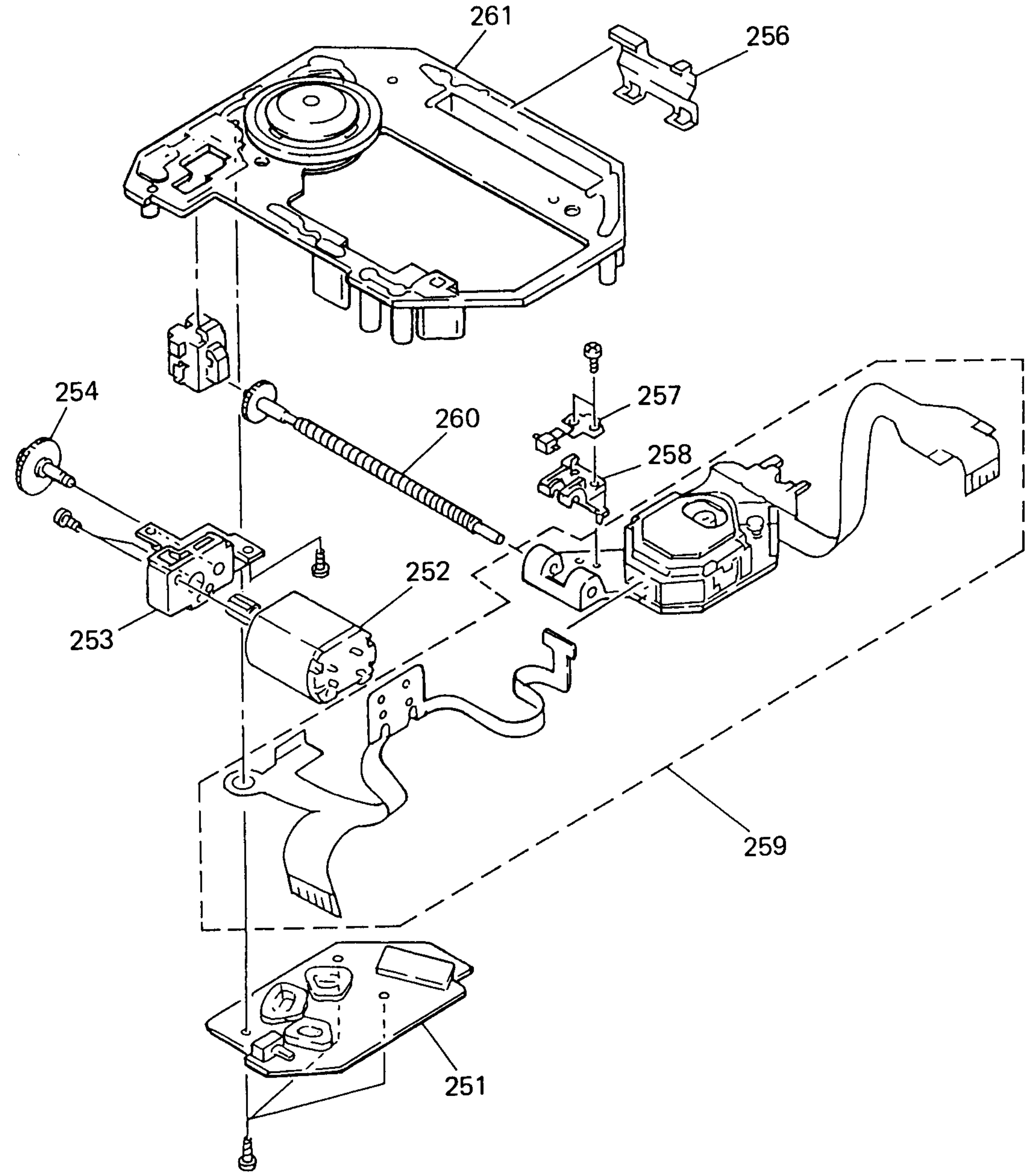
### (5) MD SECTION 4


203
M502
M501
SW501
224
206
213
217
212
221
201
202
210
223
222
204
220
216
214
218
Supplied with PRG401
PRG401
219
209
#8
215

## Mechanische Bauteile
## Mechanical components

| Position<br>Position | Bestell-Nr.<br>Part no. | Position<br>Position | Bestell-Nr.<br>Part no. |
|---|---|---|---|
| LW 0203 | 8 619 389 100 | LW 0220 | 8 619 319 618 |
| LW 0204 | 8 619 389 101 | LW 0221 | 8 619 319 336 |
|  |  | LW 0222 | 8 619 319 337 |
| LW 0206 | 8 619 389 102 | LW 0223 | 8 619 319 194 |
|  |  | LW 0224 | 8 619 389 103 |
| LW 0209 | 8 619 319 617 |  |  |
| LW 0210 | 8 619 319 332 |  |  |
|  |  | M 0501 | 8 619 329 402 |
| LW 0212 | 8 619 319 333 | M 0502 | 8 619 329 402 |
| LW 0213 | 8 619 319 402 |  |  |
| LW 0214 | 8 619 319 334 |  |  |
| LW 0215 | 8 619 309 046 | PRG0401 | 8 619 329 503 |
| LW 0216 | 8 619 319 403 |  |  |
| LW 0217 | 8 619 319 335 |  |  |
| LW 0218 | 8 619 309 047 | SW 0501 | 8 619 329 209 |
| LW 0219 | 8 619 319 193 |  |  |

## (6) OPTICAL PICK-UP BLOCK (KSM-310AAM)

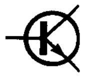


### Mechanische Bauteile
### Mechanical components

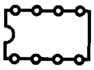
| Position<br>Position | Bestell-Nr.<br>Part no. | Position<br>Position | Bestell-Nr.<br>Part no. |
|---|---|---|---|
| LW 0251 | 8 619 319 189 | LW 0258 | 8 619 319 192 |
| LW 0252 | 8 619 329 401 | LW 0259 | 8 619 339 603 |
| LW 0253 | 8 619 319 328 | LW 0260 | 8 619 319 330 |
| LW 0254 | 8 619 319 329 | LW 0261 | 8 619 319 331 |
| LW 0256 | 8 619 319 190 | # 6 | 8 619 511 522 |
| LW 0257 | 8 619 319 191 | | |

## Elektrische Bauteile
## Electric components

| Position<br>Position | Bezeichnung<br>Designation | Bestell-Nr.<br>Part no. |
|---|---|---|
| D 0301 | 1S 2837 (SMD) | 8 925 405 504 |
| D 0401 | 1S 2837 (SMD) | 8 925 405 504 |
| D 0451 | LN 1251C | 8 945 406 177 |
| D 0501 | LN 1251C | 8 945 406 177 |
| D 0601 | 1S 2835-T1 | 8 925 405 501 |
| D 0602 | 1S 2837 (SMD) | 8 925 405 504 |
| D 0651 | 1S 2837 (SMD) | 8 925 405 504 |
| D 0652 | RD6.2M | 8 925 421 606 |
| D 0653 | RD6.2M | 8 925 421 606 |
| D 0654 | RB411D | 8 925 421 607 |
| D 0701 | 1S 2835-T1 | 8 925 405 501 |
| D 0702 | MA 8056 -M | 8 925 421 558 |
| D 0703 | MA 8056 -M | 8 925 421 558 |
| D 0705 | MA8052-M | 8 925 421 608 |
| D 0707 | MA 111 (SMD) | 8 925 405 510 |
| D 0710 | MA 3062 M | 8 945 405 389 |
| D 0711 | MA 3062 M | 8 945 405 389 |
| D 0901 | EC10DS2 | 8 925 405 625 |
| D 0902 | EC10DS2 | 8 925 405 625 |
| D 0903 | 1S 2837 (SMD) | 8 925 405 504 |
| D 0904 | RD6.2M | 8 925 421 606 |
| D 0905 | RD6.2M | 8 925 421 606 |
| D 0906 | 1S 2835-T1 | 8 925 405 501 |
| D 0907 | 1S 2837 (SMD) | 8 925 405 504 |



| Position<br>Position | Bezeichnung<br>Designation | Bestell-Nr.<br>Part no. |
|---|---|---|
| Q 0011 | 2SB 1122-S | 8 925 705 591 |
| Q 0012 | 2SK 4311HFTL (FET) | 8 945 705 825 |
| Q 0013 | 2SB1123-ST-TD | 8 925 705 616 |
| Q 0015 | FMC2-T-99 | 8 925 705 618 |
| Q 0016 | FMC2-T-99 | 8 925 705 618 |
| Q 0017 | 2SD1802FAR-TL | 8 925 705 619 |
| Q 0101 | 2SD1781K | 8 925 705 648 |
| Q 0201 | 2SD1781K | 8 925 705 648 |
| Q 0301 | 2SK 4311 (FET) | 8 945 705 825 |
| Q 0302 | 2SK 4311 (FET) | 8 945 705 825 |
| Q 0303 | 2SK 4311 (FET) | 8 945 705 825 |
| Q 0304 | DTA 114EK | 8 945 706 000 |
| Q 0401 | 2SB 1122-S | 8 925 705 591 |
| Q 0402 | DTC 124EK | 8 945 705 852 |
| Q 0403 | PN147-LF-R | 8 925 705 608 |
| Q 0404 | PN147-LF-R | 8 925 705 608 |
| Q 0601 | DTA 124EK | 8 945 705 849 |
| Q 0602 | DTA 124EK . | 8 945 705 849 |
| Q 0651 | DTA 124EK | 8 945 705 849 |
| Q 0652 | 2SC 2712G | 8 925 705 342 |
| Q 0653 | 2SC 2712G | 8 925 705 342 |
| Q 0654 | 2SC 2712G | 8 925 705 342 |
| Q 0701 | 2SC 2712G | 8 925 705 342 |
| Q 0702 | DTC 144TK (SMD) | 8 945 705 851 |
| Q 0703 | 2SC 2712G | 8 925 705 342 |
| Q 0704 | UN221D-TX | 8 925 705 609 |
| Q 0705 | UN221D-TX | 8 925 705 609 |
| Q 0706 | DTA144VK-T146 | 8 925 705 612 |
| Q 0707 | DTA115GK-T146 | 8 925 705 614 |
| Q 0708 | 2SC 2712G | 8 925 705 342 |
| Q 0709 | 2SC 2712G | 8 925 705 342 |
| Q 0710 | 2SC 2712G | 8 925 705 342 |
| Q 0711 | UN221D-TX | 8 925 705 609 |
| Q 0901 | 2SB1277TL2-QR | 8 925 705 615 |
| Q 0902 | DTC 124EK | 8 945 705 852 |
| Q 0903 | 2SC 2712G | 8 925 705 342 |
| Q 0904 | DTA 124EK | 8 945 705 849 |
| Q 0905 | 2SC 2712G | 8 925 705 342 |



| Position<br>Position | Bezeichnung<br>Designation | Bestell-Nr.<br>Part no. |
|---|---|---|
| IC 0011 | CXA 1081 Q | 8 925 900 555 |
| IC 0012 | CXA 1182 Q-Z | 8 925 900 556 |
| IC 0013 | IC CXD2500AQ | 8 925 901 264 |
| IC 0014 | IC BA6296FP-T1) | 8 925 901 265 |
| IC 0015 | NJM 2904 M | 8 925 900 742 |
| IC 0101 | NJM 2100M | 8 925 901 300 |
| IC 0301 | CDX 8451M | 8 925 901 301 |
| IC 0302 | TC7SU04F | 8 945 902 477 |
| IC 0303 | AN 78L08 | 8 945 901 078 |
| IC 0501 | IC BA6247N | 8 925 901 262 |
| IC 0601 | IC UPD75116GF- F42-3BE | 8 925 901 266 |
| IC 0602 | IC X24C16SI- C7000 | 8 925 901 267 |
| IC 0651 | NJM 2903 M | 8 905 957 277 |
| IC 0652 | LB 1641 | 8 945 902 322 |
| IC 0653 | S-8054 HN-CB-S | 8 945 903 137 |
| IC 0701 | MC68HC05C8 | 8 925 901 263 |
| IC 0702 | L 4949 BIPOLAR | 8 925 900 348 |
| IC 0901 | IC TA7805S | 8 945 903 552 |

| Position<br>Position | Bezeichnung<br>Designation | Bestell-Nr.<br>Part no. |
|---|---|---|
| X 0301 | (16,9344 MHZ) | 8 946 193 476 |
| X 0601 | (4,19 MHZ) | 8 946 193 444 |
| X 0701 | (4MHZ) | 8 946 193 475 |

| Position<br>Position | Bezeichnung<br>Designation | Bestell-Nr.<br>Part no. |
|---|---|---|
| SW 0401 | | 8 619 329 212 |
| SW 0651 | | 8 619 329 211 |
| SW 0652 | | 8 619 329 212 |
| SW 0653 | | 8 619 329 212 |
| SW 0654 | | 8 619 329 210 |

| Position<br>Position | Bezeichnung<br>Designation | Bestell-Nr.<br>Part no. |
|---|---|---|
| F 0703 | 2,5 A | 8 619 389 005 |

**Hinweis:**
Handelsübliche Kondensatoren und Widerstände sind in der Ersatzteilliste nicht aufgeführt. Wir bitten Sie, diese Teile im Fachhandel zu beziehen.

**Nota:**
Des condensateurs et résistaces commerciaux ne sont pas inclus dans la liste des pièces détachées. Veuillez acheter ces pièces chez votre spècialiste.

**Note:**
Capacitors and resistors usual in trade are not mentioned in the spare parts list. Kindly buy these parts from the specialized trade.

**Nota:**
No se indican en la lista de piezas de requestos los condensatores y los resistores de uso comercial. Les rogamos comprar esas piezas en el comercio especializado.

**Blaupunkt-Werke GmbH, Hildesheim**

**Änderungen vorbehalten!** Nachdruck - auch auszugsweise - nur mit Quellenangabe gestattet

**Modification réservées!** Reproduction - aussi en abrégé - permise seulement avec indication des sources utilisées

Gedruckt in Deutschland

Printed in Germany by Hagemann

**Modification reserved!** Reproduction - also by extract - only permitted with indication of sources used

**¡Modificaciónes reservadas!** Reproducción - también en parte - solamente permitida con indicación de las fuentes utilizadas